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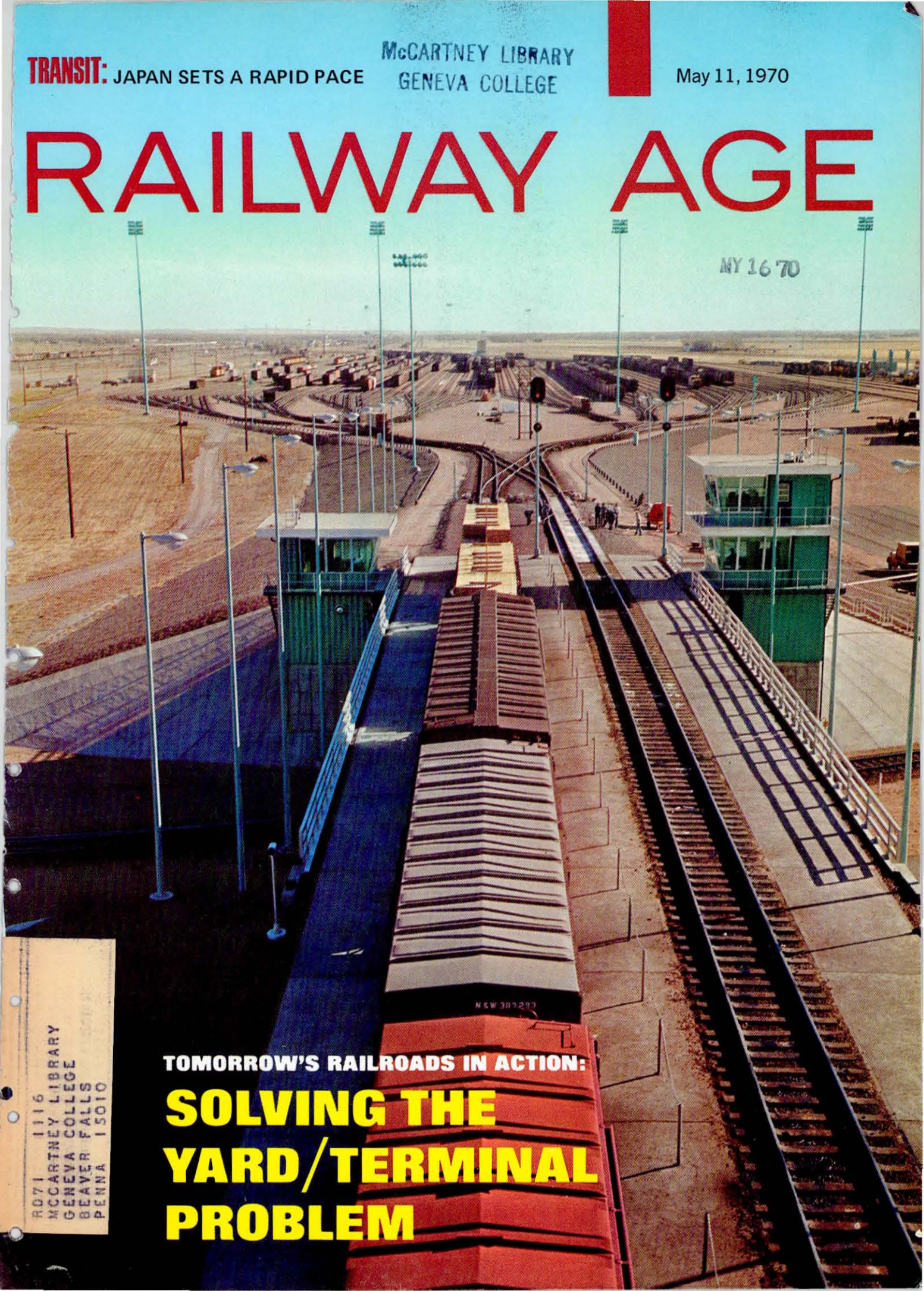
TRANSIT: JAPAN SETS A RAPID PACE

May 11, 1970

RAILWAY AGE

MY 16 '70



TOMORROW'S RAILROADS IN ACTION:

SOLVING THE YARD/TERMINAL PROBLEM

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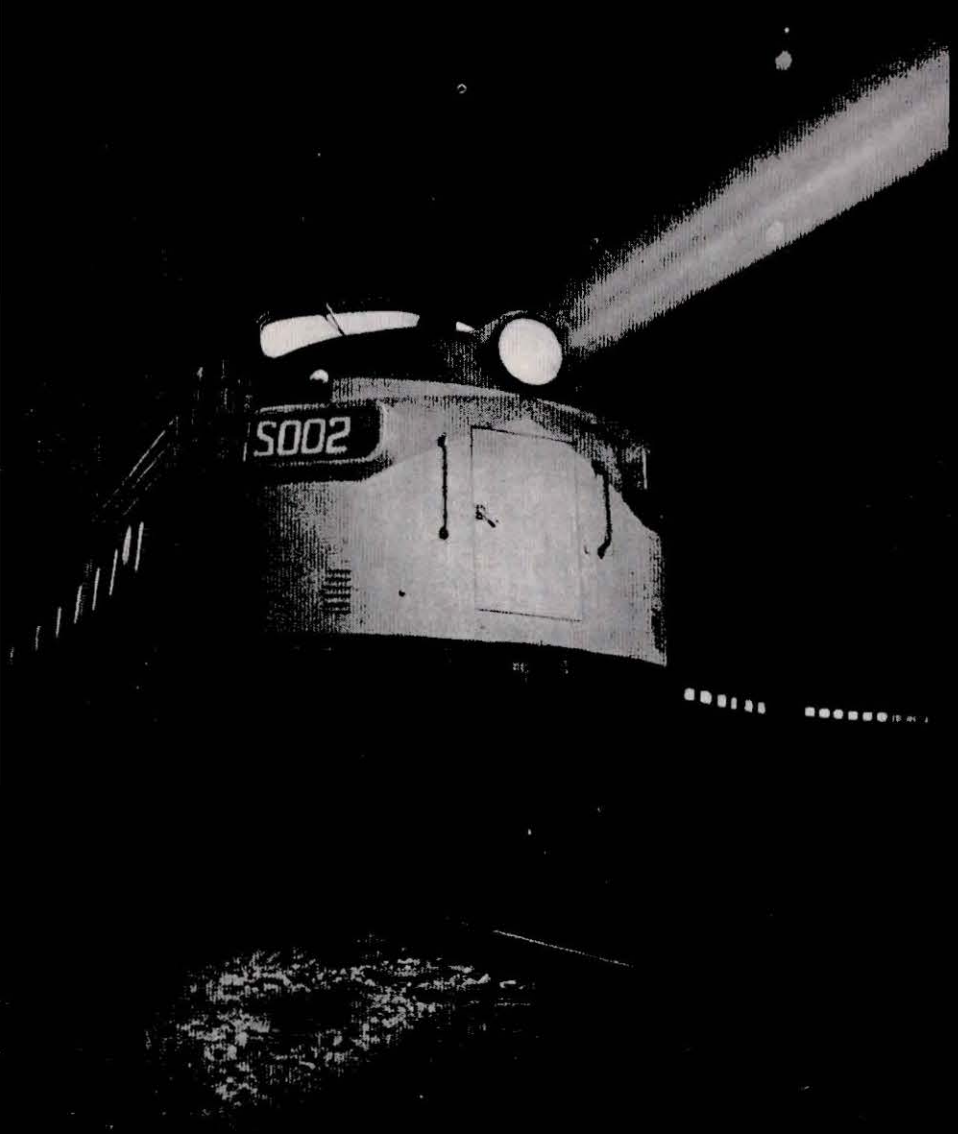

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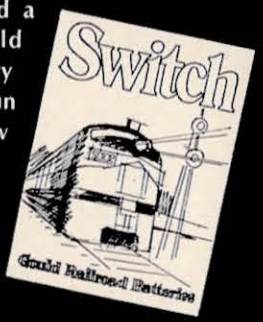

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RAILWAY AGE

May 11, 1970 • Vol. 168, No. 10

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Inside

LUTHER MILLER

A YEN FOR PROGRESS

Japan's transport planners face the same income/outgo problems that beset and baffle their counterparts in the U.S. —but they clearly have a yen for technological advancement. Billions of yen*, in fact, as members of Railway Age's Orient Transportation Seminar discovered during a 17-day swing through the Far East. For New Yorkers, some odious comparisons were inescapable. One wondered why, if Tokyo is operating automatic subway trains, New York isn't; why, if Tokyo can maintain bright, clean stations, New York can't; why, if Tokyo is ready to go into full production with what is possibly the world's most advanced subway train (p. 38), New York isn't.

Granted, New York's subways are undergoing geriatric pains for which Tokyo's lines are still too young. Still, it's always startling to be reminded, as we were again in Tokyo, that nearly any major city in the world has out-distanced the world's richest city in providing clean, attractive, modern public transportation.

NOT FOR LACK OF TECHNOLOGY

The answer is not technology, of which we in the U.S. have more than we can afford to use. It is money, and the will to spend it sensibly. If you don't believe this, just ride the New Tokaido Line and see what $1-billion plus can do when invested on the ground and not tossed into the air or cast upon the waters. The "Bullet" trains are all and more than they are reputed to be. The diminutive-appearing dining cars—essentially, one long counter with stools and one long serving kitchen, separated by an aisle milling with stewardesses as pretty as Geishas—are remarkably efficient. They're also westernized. No seaweed in sight.

IN TOKYO, A MEETING OF MINDS

The main event in Tokyo was, of course, the Cybernetics Symposium. Anyone who went to this meeting looking for an easy junket must have been sorely disappointed. It was a hard-working session that produced, on the final day, a rather remarkable meeting of some rather remarkable minds (p. 41).

RAILROAD FOR SALE

In Hong Kong, the RA seminarists inspected that city's soon-to-be-unveiled plans for a more sophisticated public transportation system than is now provided by buses, trams, ferries, sampans and an occasional rickshaw. Publisher Bob Lewis, an old China hand, forewent Hong Kong in favor of a return via Alaska. His report, "Railroad for Sale," will appear in the May 25 issue.

*$1 = 360 yen.

When you're connecting voice, data, or other signals to microwave radio, the right multiplex makes all the difference between a perfect and an imperfect union.

That's true for short-haul or long-haul, low-density or high-density applications. And that's why we offer the broadest multiplex line of any manufacturer.

In fact, we're the only manufacturer that makes multiplex equipment for every application.

Take our unique 46A, for example. You can buy one channel or 1260 channels. Or anything in between. The 46A maintains toll-quality performance on systems thousands of miles long. And you can assign data circuits indiscriminately without sacrificing voice service on any other channel.

Then there's the 24-channel 34A for light routes. And the AN/UCC-4(V) for military systems of 12 to 600 fully loaded voice or data channels.

And the 47A Radio Multiplex to transfer up to 144 channels from cable to radio and back again. Directly. So there's no need for back-to-back channelizing equipment.

In fact, we make just about everything you need for a complete communications system. Multiplex, microwave, cable carrier, data modems, and accessories.

If you want us to, we'll also install and check out the system, train your personnel, and provide back-up support for the life of the equipment.

That completes the perfect union.

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GENERAL TELEPHONE & ELECTRONICS

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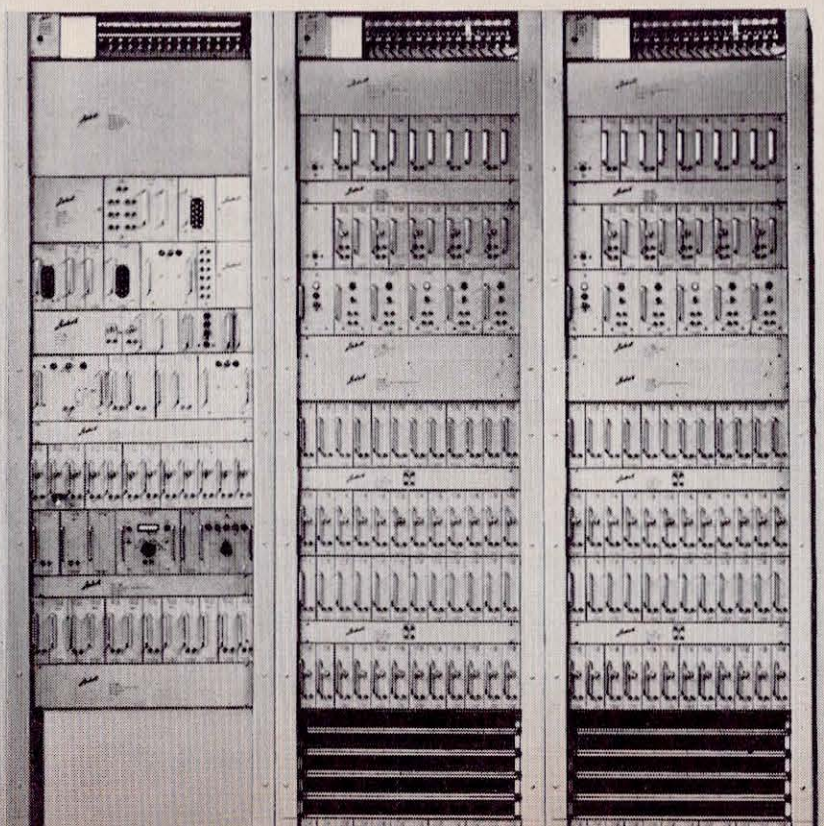
Multiplex Equipment from Lenkurt

In order to form a more perfect union.



RAILWAY AGE

MAY 11, 1970

NEWS

PASSENGER TRAFFIC	Senate approves a save-the-passenger train plan	p.11
	DOT suggests alternatives for the Northeast Corridor	p.12
	Survey appraises passengers' reactions to Metroliner	p.25
FREIGHT TRAFFIC	CP's robot unit train begins hauling coal to deep-water port	p.11
TRANSIT	Seattle awaits voters' decision on $440-million bond issue	p. 8
	MTA seeks grant to study stored energy system	p.12
	Toronto to experiment with six of its new cars	p.13
GOVERNMENT	Stafford expected to be nominated as permanent ICC chairman	p. 8
	ICC schedules hearing on IC rate rollback	p. 8
	Incentive per-diem plan intended to enlarge box-car fleet	p.12
	Debate on safety bill pits states' rights against Federal power	p.14
TECHNOLOGY	ACF sets its laboratory-on-wheels in motion	p.13
FINANCE	Railroad earnings decline in first quarter	p.15
FREIGHT CARS	Journal performance showed improvement in 1969	p.13

FEATURES

TOMORROW'S RAILROADS IN ACTION	UP's Bailey Yard brings shippers closer to their markets	p.26
	Expanded Argentine yard measures up to the job	p.28
	Penn Central expands its Chicago TrailVan facilities	p.30
TRANSIT	Wabco enters propulsion field with a-c traction motor	p.32
	Japan sets a rapid pace	p.38
	CP Rail brings push-pull bi-level commuter trains to Canada	p.44
CYBERNETICS	Salvation through cybernetics?	p.41

COMMENT

INSIDE	A yen for progress	p. 5
LINES ON LABOR	UTU holds conference on national transportation policy	p.15
WATCHING WASHINGTON	Rails fight to keep cost case open	p.25
VIEWPOINT	Applied cybernetics vs. garbage collection	p.66

DEPARTMENTS

Carloadings	p.59	Stock Report	p.62
Market	p.59	Transit Roundup	p.47
New Products	p.56	Viewpoint	p.66
People in the News	p.51	Watching Washington	p.25

Short and Significant

GOVERNMENT

WILL STAFFORD BE PERMANENT ICC CHAIRMAN?

The front-runner for the job as the first permanent chairman of the ICC now apears to be the present ICC chairman, George M. Stafford. A commissioner since 1967 and chairman since Jan. 1 Stafford reportedly will be approved soon by the White House and easily confirmed by the Senate. The vacant commissioner's position, Washington sources say, will be filled by William D. Brewer, deputy administrator of the Small Business Administration. The addition of Brewer, a Republican, would give the GOP a 6-5 majority on the Commission.

ICC SCHEDULES HEARING ON IC RATE ROLLBACK

July 13 is the new date for a hearing on Illinois Central's rollback of the 6% rate increase granted the nation's railroads in November. The hearing had been scheduled for May 25. The IC was permitted to cut rates in March, pending an investigation by the ICC. The rate reduction covered all kinds of freight in straight or mixed carloads between IC stations in Western Trunk Line, Illinois Freight Association and Southwestern Territories; and traffic between IC stations in the three territories and stations of all roads in the Southern territories. Sixteen roads protested the action.

TRANSIT

BUDD CONSIDERS SELLING RAIL DIVISION

Budd Co. is holding discussions with a company interested in acquiring its railway division, according to Budd President Philip W. Scott. Scott said at Budd's annual meeting that the talks had been initiated by the other company, which he declined to identify, and that Budd's willingness to sell was consistent with a policy to dispose of certain Budd operations which are regarded as marginal. The railway division, according to Budd, has lost more than $15.5 million since 1965. Last week, General Electric had "no comment" on reports that it was the interested company.

ROHR AGREES TO BUY BUS MANUFACTURER

Rohr Corp. and the Flxible Co. have reached an agreement in principle under which Rohr would acquire Flxible for common and preferred stock. The agreement is subject to approval by Flxible shareholders. Rohr holds the contract for 250 BART cars.

WASHINGTON METRO WINS COURT CASE

The Virginia Supreme Court of Appeals has upheld the right of three suburban towns and two counties to enter into service contracts with the Washington Metropolitan Area Transit Authority. The decision, a WMATA spokesman says, will increase the salability of $835 million worth of bonds, which the Authority will use to finance approximately one third of the cost of the Metro system.

SEATTLE GOES TO THE POLLS—AGAIN

Seattle voters on May 19 will decide the fate of a $440-million transit bond issue. A favorable vote would be the first step toward construction of a system that would ultimately include 46 miles of rapid transit lines and 1.5 miles of busways, at a total cost of $1.3 billion. Polls show 70% of the public in favor of the bond issue. A 60% vote is required for approval. A similar bond issue proposal was rejected in a close vote two years ago. A post-mortem blamed "over-confidence."

FINANCIAL

SOUTHERN REPORTS HIGHER INCOME

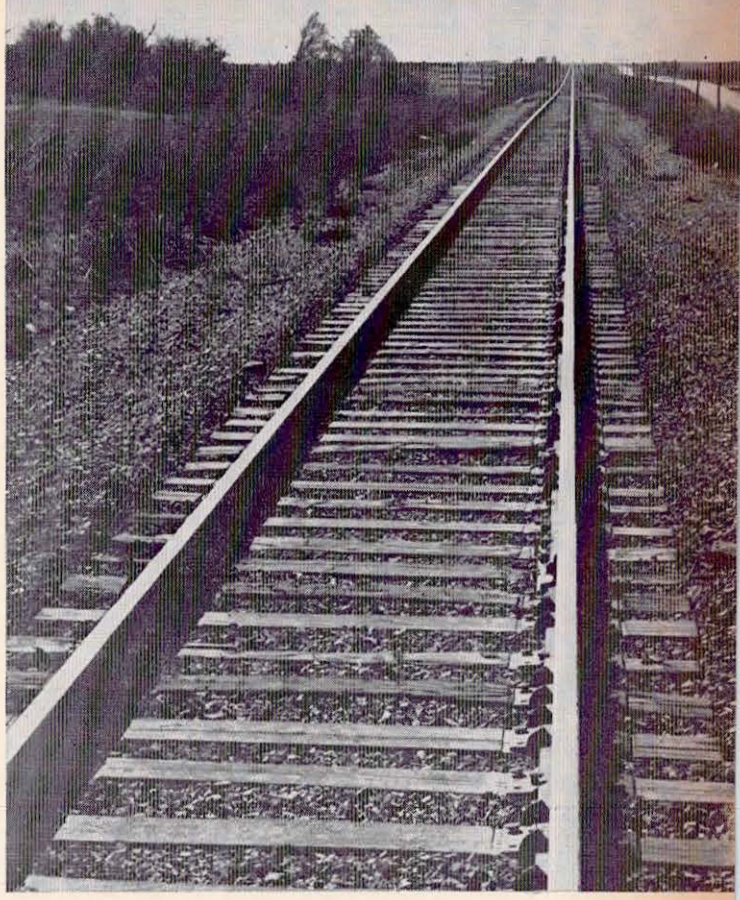
Southern Railway's consolidated net income for the first quarter of 1970 was $12.3 million, or $1.71 per share, an increase of 9.2% over the first quarter of 1969, when net income was $11.3 million, or $1.55 per share. Southern's freight revenues—$135.8 million—were only 3.2% higher than the revenues for the 1969 quarter.

PC SUBSIDIARY TO RAISE $100 MILLION

Pennsylvania Company, a wholly-owned subsidiary of Penn Central Transportation Co., is planning to offer $100 million of debentures this month. Proceeds from the debenture sale, the company says, will be used to purchase from PC the Manor Real Estate Co., Clearfield Bituminous Coal Co., and Despatch Shops, Inc.

SAFE
This stretch wasn't long enough!

UNSAFE
This stretch may be too long!



Our new rail-mounted SERVOSAFE® Hot Box Detective™ prevents axle burn-offs and derailments.

It's a good thing to have on your railroad.

But, for safety's sake, don't stretch a good thing!

Do you have long stretches of track without SERVOSAFE protection?

Recent studies have revealed that such factors as heavier car loadings, faster train speeds and greater accelerations have combined to increase the incidence of overheated journal boxes. This has prompted many railroads to review their spacing of hot box detectors. Up to now, the average spacing has been 25 to 30 miles apart along line-of-road. Under today's conditions, however, a hot box can develop in less than 25 miles and cause a derailment *between* detectors.

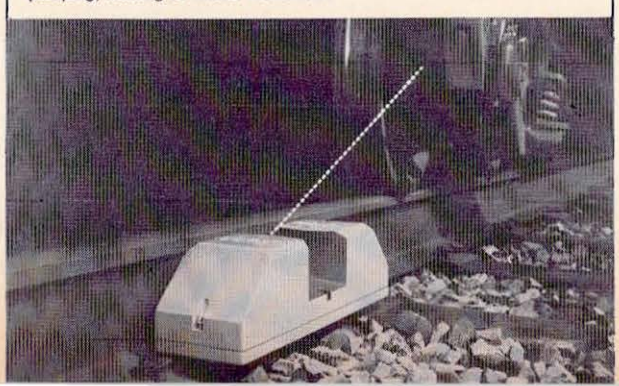
One solution becomes self-evident: closer spacing of hot box detectors for more protection. A SERVOSAFE system will not prevent a hot box—but it will detect, locate and warn of a hot box before the condition worsens into a dangerous, costly axle burn-off and derailment!

Will it cost you more to get this additional SERVOSAFE protection? Not really. Here are some reasons why not:

Our new Model 8808 SERVOSAFE system features patented rail-mounted scanners and solid state electronic data processing for the fastest, most precise detection of hot boxes. It allows remedial action to be taken *before* a failure occurs, and helps cut down the high costs of major salvage or replacement. The cost of installation and maintenance is appreciably reduced by eliminating the need for concrete foundations, special ties and expensive roadbed preparation. The rail-mounted scanner can be easily removed for maintenance or relocation. Finally, compare the cost of a SERVOSAFE with the $200,000 involved in just one derailment that could be prevented.

That's why most prudent, progressive railroad managements agree when we say, "More SERVOSAFE protection isn't costly—*lack of it is!*"

Model 8808 SERVOSAFE Hot Box Detective Rail-mounted scanner "looks" at journal bearing behind truck frame with a vertical, close-in target scan for greater uniformity and accuracy. Scanner is securely clamped to the rail (no drilling required). Accuracy is not affected by rail pumping, running or lateral movement.



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Since 1957, more than 1,000 SERVOSAFE Hot Box Detective systems have been put into service on 54 of the world's major railroads, and have compiled an unequaled record of safety improvement and cost reduction.

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MEMBER RPI

Whether you're delivering freight or passengers on transcontinental routes or rapid transit, Anaconda has the products that'll help you do it better—more efficiently, more economically, more effectively.

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Products that will get you on the right track.

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RAILWAY AGE NEWS

Senate approves a save-the-passenger-train plan

The fate of the U.S. passenger train now lies in the hands of the U.S. House of Representatives following Senate passage May 6 of a measure that would free rails from passenger duties under the Interstate Commerce Act but still preserve a basic system of service.

The measure provides a for-profit, quasi-public corporation to operate intercity trains—in contracts with railroads—over a basic network designated by the Transportation Secretary.

As approved by the Senate, 78-3, the plan includes Federal involvement totaling $175 million, including $40 million for start-up costs, $60 million in guaranteed loans for operation and equipment and $75 million for loans to roads financially unable to "participate."

Rails would participate by making a monetary exchange for their freedom. The exchange could be made according to three different formulas based on a portion of 1969 passenger losses. A railroad could choose the most favorable formula.

Rail contributions would give the corporation an additional $220 million in the first three years of the corporation's March 1, 1971-Jan. 1, 1975, initial period of operation. Rails would receive common stock in the corporation for their contributions.

The Senate measure says any railroad not joining may take off no passenger train "whatsoever" before Jan. 1, 1975.

Deemed a common carrier by railroad under Section 1 (3) of the Interstate Commerce Act, the proposed corporation would be authorized to "own, manage, operate or contract for the operation of intercity passenger trains; to carry mail and express in connection with passenger service; to conduct research and development. . . ."

Canadian Pacific's "robot" train begins hauling coal

Canadian Pacific has begun operation of three 88-car remote-control unit trains which will haul at least 51 million tons of coal over the next 15 years from the Kaiser Resources Ltd. mines at Sparwood to a new deep-water port at Roberts Bank, near Vancouver.

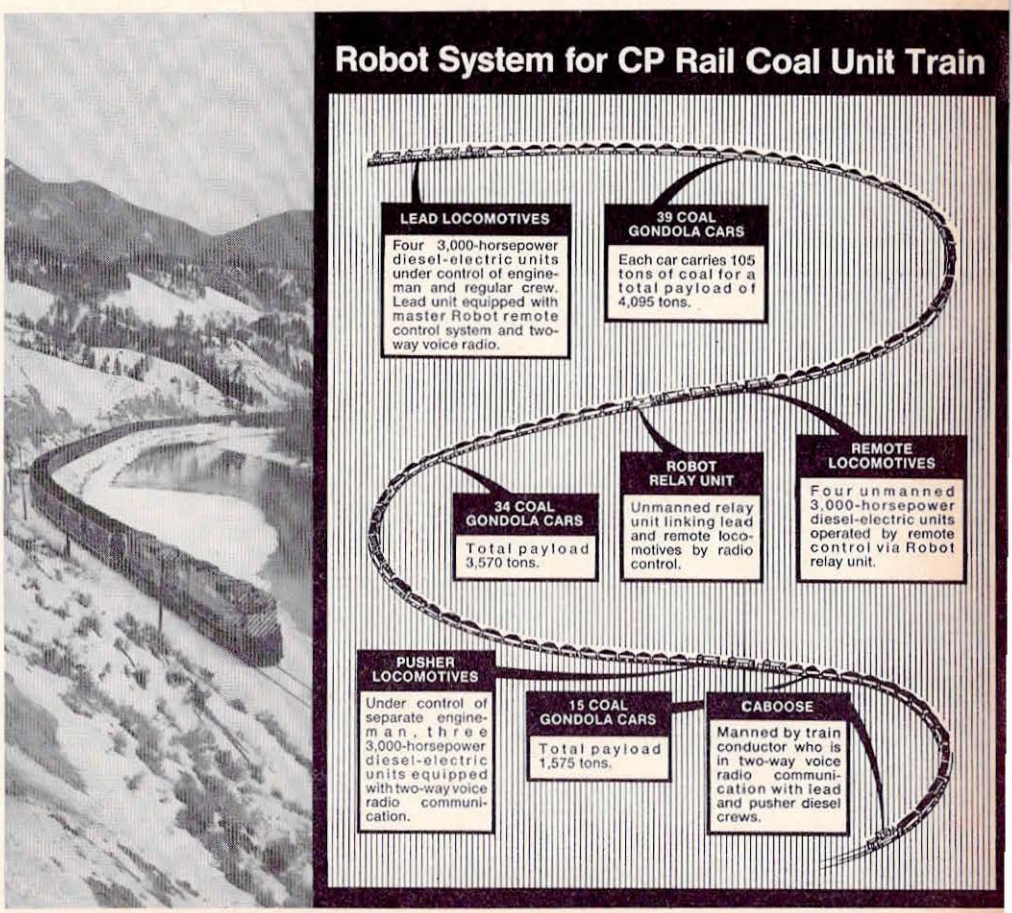
The three trains each operate on a 72-hour schedule, so that one train arrives every day at Roberts Bank. As many as 11 3,000-hp locomotives are used to haul a train during the 700-mile run.

CP will increase the number of cars in each train as coal shipments increase in volume and at peak volume will operate six 88-car trains, bringing two trains a day into Roberts Bank.

The coal is destined for Japan, to be used in steel mills. CP has two contracts which provide the road with 51 million revenue-tons of coal from the Sparwood mines.

The trains operate with manned locomotives but use automatic speed controls.

Robot cars deep in the train consist receive radio messages from the head-end locomotive and execute brake applications and releases and power commands. The 105-ton gondola cars in the trains are permanently coupled.


Robot System for CP Rail Coal Unit Train
LEAD LOCOMOTIVES
Four 3,000-horsepower diesel-electric units under control of engineman and regular crew. Lead unit equipped with master Robot remote control system and two-way voice radio.
39 COAL GONDOLA CARS
Each car carries 105 tons of coal for a total payload of 4,095 tons.
ROBOT RELAY UNIT
Unmanned relay unit linking lead and remote locomotives by radio control.
REMOTE LOCOMOTIVES
Four unmanned 3,000-horsepower diesel-electric units operated by remote control via Robot relay unit.
34 COAL GONDOLA CARS
Total payload 3,570 tons.
PUSHER LOCOMOTIVES
Under control of separate engineman, three 3,000-horsepower diesel-electric units equipped with two-way voice radio communication.
15 COAL GONDOLA CARS
Total payload 1,575 tons.
CABOOSE
Manned by train conductor who is in two-way voice radio communication with lead and pusher diesel crews.

NEWS

Incentive plan goal: Move plain box cars

Anyone with doubts about the importance of the plain old box car will be interested in the incentive per-diem plan that ICC is putting into effect June 1 to cover the September-March shortage periods that have been the subject of much ICC probing. The ICC incentive plan, first displayed in a December 1969 interim report, provides for per diem additional to basic rental charges—specifically on unequipped box cars.

And the ICC plan clearly states that revenues gained from the incentive rates must be applied to the purchase and maintenance of the simple box car.

Aimed at increasing the rate of return on investment allowed car owners from 6% to a maximum 12%, the incentive charges range from a high of $12.98 per day for a car costing $39,000 to $41,000 and under five years old, to a low of four cents a day for a car costing less than $1,000 and more than 30 years old.

Although the economies that can be gained from specialized equipment and the competitive need for such cars will prod carriers to keep purchasing special cars, ICC says the fleet of plain box cars must be enlarged, too. "The box car remains the workhorse of the fleet and we have not been shown evidence that it can or will be replaced in that role. On the contrary, its primary role remains and yet the number of box cars in active service has declined, resulting in the unsatisfied demand that the 1968 freight car study helped us to analyze."

Acting on authority granted by a 1966 law, the ICC has included an "earmarking" clause covering the use of the incentive per-diem revenues.

Carriers must segregrate in a special account an amount "equal to the net credit balance resulting from any incentive per-diem settlement involving box cars."

ICC adds, however, that taxes paid on the incentive revenues can be considered. "During any calendar year in which the carrier pays income taxes subject to a tax ruling governing incentive balances, the amount required to be earmarked by the carrier . . . shall be reduced by the applicable statutory percent, or by the percentage derived from dividing the income taxes in fact paid by the carrier by its net income, whichever percentage is less."

What do the carriers do with the incentive revenues? ICC orders that the money be used to buy or build new unequipped box cars and to rebuild old cars.

The funds may be drawn in whole or in part provided the carrier has in "the same calendar year built or purchased its 1964-68 average number of such box cars and made up any arrearage in having failed to maintain such average each year this order is in effect."

Any un-used incentive revenue may be invested in government bonds or other interest-bearing temporary securities. But the interest on such investment "will become part of the earmarked fund."

Although ICC's interim report exempted Mexican and Canadian railroads, Canadian carriers, at their request, have now been included, but on a different basis from U. S. roads.

ICC grants the Canadian argument that elimination would "create dislocation of equipment and reduce car utilization."

But ICC adds that U. S. roads could wind up contributing to the enlargment of the box car fleet *within* Canada without increasing the number of Canadian cars in the U. S. Therefore, ICC says the incentive charges for Canadian cars will be payable to a U. S. carrier "designated by the owning railroads of Canada." The designated U. S. carrier must keep a separate account for Canadian cars.

The ICC order covers box cars with these mechanical designations: XM, XMI, XMIH, VA, VM, XC, XCI, and XU, and code numbers BO80 through B329.

ICC's 1968 study covered supply and demand conditions of that year for various types of freight cars. "On the basis of this study," ICC says, "we found that there are insufficient unequipped, general service box cars to meet the orders for such equipment throughout a large part of the country for the six-month period September through February."

MTA wants to study stored energy system

Energy dissipated in halting transit trains usually results only in higher temperatures in tunnels, but it could be returned to the distribution system for powering other trains (see page 32). New York's Metropolitan Transportation Authority is seeking outside funds to conduct a $1.7 million, 24-month investigation of an on-board stored energy system for transit cars.

Garret Corp., which will commit $100,000 to the project, proposes a pair of motor-driven flywheels under each car to be accelerated by current from the regular traction motors (functioning as generators, as they do now in dynamic braking). Flywheels would continue to rotate at very high speed while the train was standing. In starting, the flywheel motors would be changed to generators to produce up to half of the current for the car's regular traction motors as the train accelerated.

MTA aims to reduce peak power requirements and total power consumption, cutting costs and making possible the use of more air-conditioned cars.

DOT looks ahead (in 17 volumes)

What lies ahead for Northeast Corridor travellers? A two-foot stack of DOT studies—17 volumes in all—suggests the following options:

—A brand new Washington-to-Boston high-speed rail line similar to Japan's New Tokaido Line.

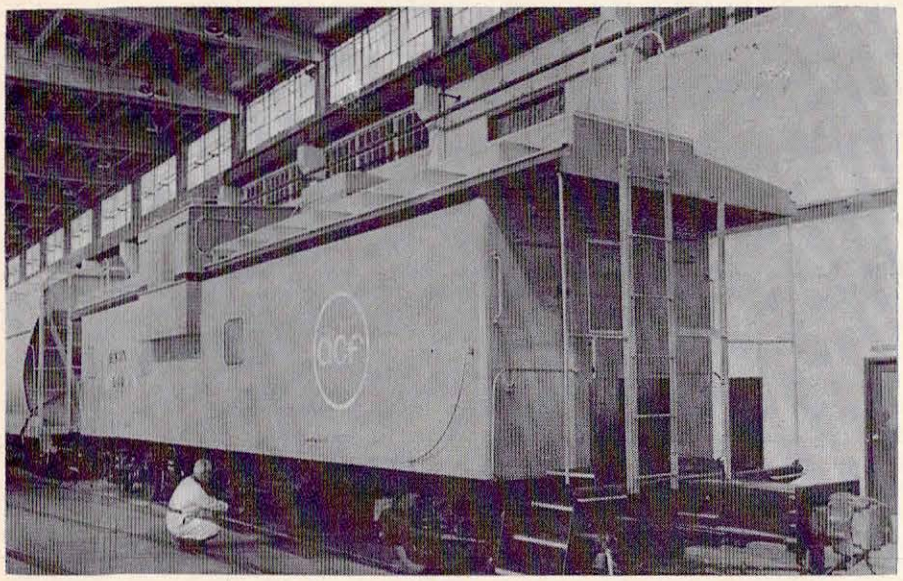
—A radically new tracked-air-cushion-vehicle line running along the spine of the Corridor.

—$1.3 billion worth of improvements to the existing Penn Central mainline.

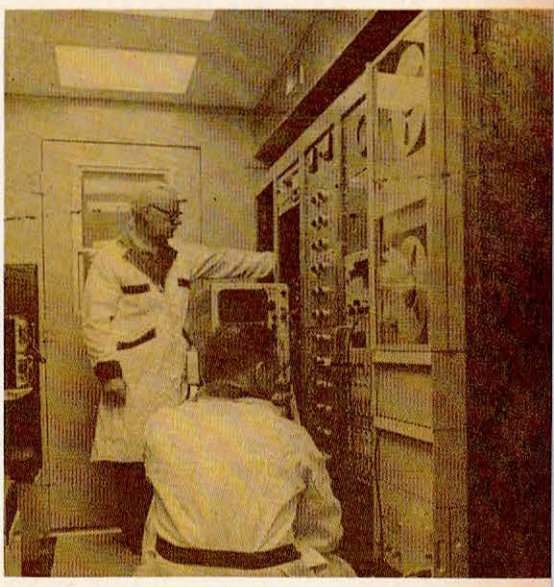
—Extension of present Metroliner-type service.

—Short and/or vertical take-off and landing aircraft—or a mix of these with a high-speed ground mode.

The reports took five years to prepare, with heavy use of computers, and are designed to let planners weigh alternatives.



OUTSIDE, ACF's new instrument car appears to be oversized (by 10 feet) caboose.



INSIDE, ACF car is fully equipped lab.

ACF sets its new laboratory-on-wheels in motion

Attempting to obtain what it calls environmental criteria for the design of freight cars, ACF Industries has placed into service a railroad instrument car.

The shell of the car, resembling a caboose, was built by International Car Co. at Kenton, Ohio. ACF equipped the car with instruments which will record forces, accelerations, strains, displacements and physical behavior of the freight car to which it is coupled.

The mobile laboratory has a 30-inch cushioned underframe, specially sprung high speed trucks, two diesel generating units, and its own air conditioning and heating system. It will be operated by two to four test engineers and electronic technicians.

The ACF laboratory-on-wheels will also be used to supplement model and laboratory tests of new freight car designs. The information obtained from cars in service, ACF says, will provide the foundation for structural design of cars in the future.

Commented George Reed, director of engineering and research at ACF's Technical Center: "We're looking not only at today's environment, which may entail a car's being locked into a 140-car consist traveling at 60 miles an hour, but also at the next decade when speeds up to 90 miles per hour are expected."

This is the third instrument car to be used by ACF. The first was put into service in 1948; the second, a converted passenger car, was in service between 1960 and 1968.

Toronto experiments with 6 transit cars

Increased passenger comfort and reductions in power costs will come in for special attention on six experimental cars in the 76-car order placed by Toronto Transit with Hawker Siddeley Canada. While 70 cars in the $11.5 million order are to be virtual duplicates of existing TTC equipment, the final half dozen will have new noise control techniques.

Trucks will incorporate air springs, rubber chevron connections and acoustic insulation to cut transmission of noise and vibration to the car body. Special three-layer panels will be used for doors and interior linings; added insulation will be installed under the floor. Ventilation will be through ceiling ducts rather than by open ceiling fans, eliminating direct reflections of noise from tunnel roofs.

For the cars' propulsion, TTC is to appraise "chopper" control. This solid-state equipment, in conjunction with d-c motors, will also be arranged for regenerative braking. Chopper systems regulate voltage supplied to motors (and consequently their acceleration characteristics) by rapid on/off current switching, rather than utilizing the resistors of more conventional controls.

Journal performance improved in 1969

The 1969 average of 1,702,956 miles per hotbox setoff for North American railroads represents an improvement from the 1968 figure of 1,655,083 miles. The 1969 result was still well below the 1967 average of 1,828,329. The figures are gathered from individual railroads by the AAR Mechanical Division.

The industry's journal performance declined between September 1967 and April 1969. The reversal came when industry action increased the frequency of servicing solid-bearing journal boxes.

NEWS

Safety bill debate pits states' rights against federal power

Congress is inching toward enactment this session of the most comprehensive rail safety law in history. Whether or not the new legislation will be acceptable from an industry viewpoint, however, depends upon resolution of major differences between an already-passed Senate version and a rail- and Administration-endorsed bill now before the House Subcommittee on Transportation and Aeronautics.

It is the old bugbear of states rights which causes the differences between the two bills. Everyone—management, labor, Federal and state authorities—agrees on the need for a new law to help solve the industry's undoubted safety problems. These parties hammered out their recommendations last year in the report of the Task Force on Railroad Safety to Transportation Secretary John A. Volpe.

"Solutions short of broad Federal regulation may not adequately meet the situation," the Task Force noted in its report. But when the Senate, last December, passed its Federal Railroad Safety Act (S. 1933), it permitted states to take over all enforcement aspects of any new Federal regulatory system.

Such state control, says AAR President Thomas M. Goodfellow, "would create a fragmented enforcement structure which is inconsistent with true Federal regulation and fails to recognize the inherently interstate nature of railroad facilities and operations."

It is apparent that a uniform Federal rail safety law could lose much of its clout, if rules, regulations and standards established under it were to get lost in a red-tape morass of 48 (49, counting the District of Columbia) state jurisdictions. For this reason, the railroads and DOT are straining at the bit to get the House bill (H. R. 14417) enacted. This so-called "Administration" version preserves broad Federal authority and enforcement. Opposition comes from the National Association of Regulatory Utility Commissioners, which accuses the AAR of trying to emasculate state authority—efforts NARUC calls hostile to the public interest.

If, as expected, the House subcommittee reports out its bill to the House Committee on Interstate and Foreign Commerce, and passage proceeds through the House, the differences in the two versions will have to be ironed out in a conference committee.

The House bill repeals existing Federal statutes, beginning with the Safety Appliance Act of 1893, the first rail safety law, and gives the DOT Secretary authority to prescribe safety rules, regulations and performance and other standards in all areas of railroad safety. It also authorizes DOT to conduct rail safety research, an authority much prized by the FRA which likes to base its regulations on the "scientific" basis of research rather than on the often conflicting needs of management and labor.

The House bill further provides for the establishment of a Railroad Safety Advisory Committee, chaired by the Federal Railroad Administrator with eight members appointed for one-year terms by the DOT Secretary: two public and two each from management, labor and NARUC. To this body will come all proposed safety rules, regulations and standards prior to their promulgation.

As to state regulation and participation, the House bill:

- Allows state and local statutes to remain in effect until DOT has prescribed rules, regulations and standards covering their subject matter.
- Requires agreements to be entered into with each state by DOT, which can, if requested by the state, authorize the state to perform all or any part of compliance inspection with respect to new safety codes established by DOT. The Federal government will reimburse states for all or part of their expenses incurred under the new codes.
- Stipulates enforcement to be through Federal courts.

The Senate-passed bill allows states to adopt or continue in force an "additional or more stringent law, rule, regulation or standard relating to rail safety *when necessary to eliminate or reduce a local safety hazard, . .* .and when not creating an undue burden on interstate commerce" (italics added).

Further, any state agency which complies with certification procedures will be empowered to enforce all Federal rules governing safety established under the Act, except those involving rolling stock and employee qualifications. Enforcement would be in state courts.

Darkening statistical picture brings action on three fronts

While Congress debates a new Federal Railroad Safety Act, the seemingly routine—but vitally important—attack on soaring accident statistics continues. Here are three fronts where action is happening:

- An FRA research report estimates there are 30,000 railway-highway grade crossings in existence whose traffic volumes justify immediate improvements. Cost of the improvements: $580 million. Most important, says the report, is the fact that if the improvements were made, the accident rate (1800 deaths, 4000 injuries and economic losses of $300 million each year) would be reduced to one-half the number which would be expected if no improvements were made.
- AAR is offering a new 183-page booklet designed to inform railroad employees and local fire and police agencies of procedures to be followed in the transportation of hazardous materials. Titled "Dangerous Articles Emergency Guide," the booklet is a revised version of an earlier publication and contains descriptions of some 900 materials.
- A film stressing the importance of proper handling of poison pesticides has been released by the National Agricultural Chemicals Association, Washington, D. C. Produced with DOT, AAR and American Trucking Associations cooperation, the film gives emergency procedures to be followed in the event of an accidental spill or leak, including the actual operations of the Pesticide Safety Team Network, the newly organized nationwide grid of trained safety teams.

A turn of the tide in traffic?

The predicted mid-year rise in traffic may be coming earlier than expected. President Gregory S. DeVine says C&O/B&O are experiencing "a rising trend in merchandise freight traffic" which could mean that "a turning of the business tide may be just ahead."

A business pickup will come none too soon for railroads. Despite higher rates, the AAR estimates that first-quarter earnings for the industry as a whole were slightly below last year's bad-enough $97 million.

The only really bright report came from the Southern, which said its consolidated net income for the quarter was up 9.2%—from $11.3 million a year ago to $12.3 million in the first quarter of 1970.

At the other end of the spectrum, Penn Central Co. reported a $17,229,000 consolidated loss for the quarter, compared with a profit of $4.6 million in the comparable 1969 period.

Union Pacific Corp.'s revenues were up—by $53.6 million—but its net income declined from $15.2 million a year ago to $13.5 million in the first quarter of 1970.

Norfolk & Western also reported a lower net income on higher revenues. Income declined from $22,151,000 to $9,492,000, while revenue rose from $234,310,000 to $245,780,000.

Seaboard Coast Line Industries, using generally accepted accounting principles, reported consolidated net income of $7,981,000, or 89 cents per share for the first quarter. A year ago, Seaboard reported consolidated net income of $8,283,000, or 92 cents per share. Seaboard's revenues were up by $5,631,000.

Santa Fe Industries reported first-quarter transportation revenues up from $180.5 million to $186.7 million. SFI net, according to generally accepted accounting principles, dropped from $17.1 million in 1969 to $13.2 million this year.

Missouri Pacific operating revenues climbed from $115.5 million to $129.4 million, but consolidated earnings fell by $836,000, to $5 million plus.

Louisville & Nashville revenues rose from $78.5 million last year to $90.2 million, but net income dropped from $5.4 million in 1969 to $3.8 million.

Lines on Labor

GUS WELTY

IT'S SPRING—AND THE HEAT'S ON

From all indications, the brotherhoods are getting restless. Wage and rules demands have been pending for months, and little has happened—in part, at least, because of the shopcraft wage dispute and the recurring crises it caused. Now, the shopcraft case is out of the way. And the other unions don't want to wait any longer to fatten up the paychecks of their members. The Clerks, largest of the non-ops, have a strike ballot out for return by May 20. The United Transportation Union is taking a strike vote, after asking for mediation on wages. The Engineers are angrily charging the carriers with stalling and with trying to "force" national handling of wage demands. The heat is, in fact, on.

BUT ON ANOTHER FRONT, THERE'S A POSITIVE APPROACH

While there is tough talk on one subject, however, there is also some positive thinking on the broad subject of railroad and transportation problems—reflected in these words: "Ours is the only industrial nation in the world that does not have a working policy on transportation. . . . We feel it is only fitting that [government] adopt a policy which will assure that the massive taxpayer input [to transportation] is allocated for optimum public benefit. The alternative is a form of chaos that has already begun to develop. Freight and people are moving through our metropolitan areas and across the country without the slightest regard for coordinating modes for maximum efficiency. The result is that every American, as a taxpayer, rider and consumer, is subsidizing the rapidly declining efficiency of a shaky transportation facility."

A NEW TRANSPORTATION POLICY: WHY NOT?

An academic-type might have said that, or a transportation analyst, or a railroad man. As it happens, though, the speaker was a transportation professional of a different kind: UTU President Charles Luna. This year, UTU turned its more-or-less annual transport conference into one concerned mainly with national transportation policy. Luna's comments came in a pre-keynote keynote—and after that, it was up to the participants (again including a number of railroaders) to pick up the ball and take it somewhere. Public policy isn't made in private conferences, of course, no matter how prestigious the conferees. Policy *is* made when enough influential people and groups start applying pressure to government, and keep the pressure building. Rail labor is one of those "influential groups" which could lend a hand with pressure, in behalf of a new and saner national transportation policy. Luna's words could be a beginning. Hopefully, they are.

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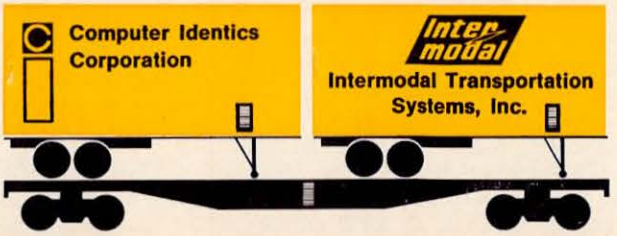

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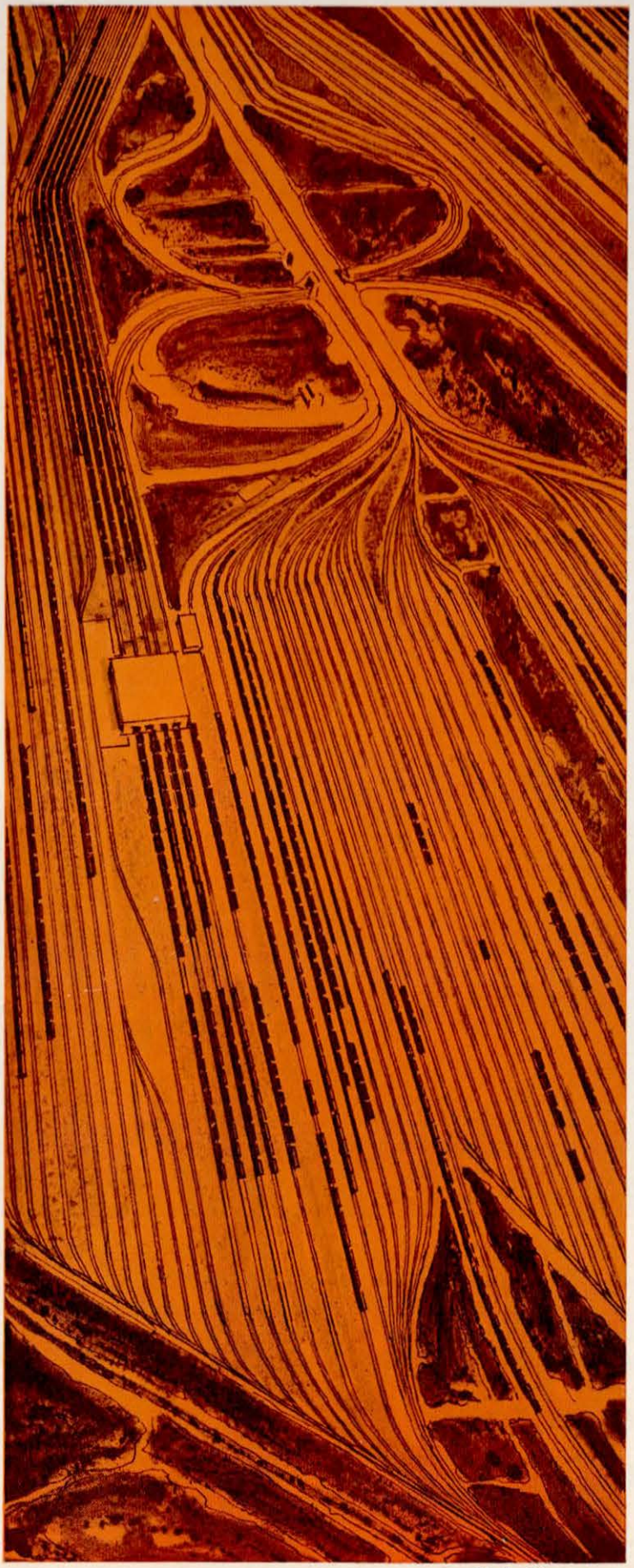

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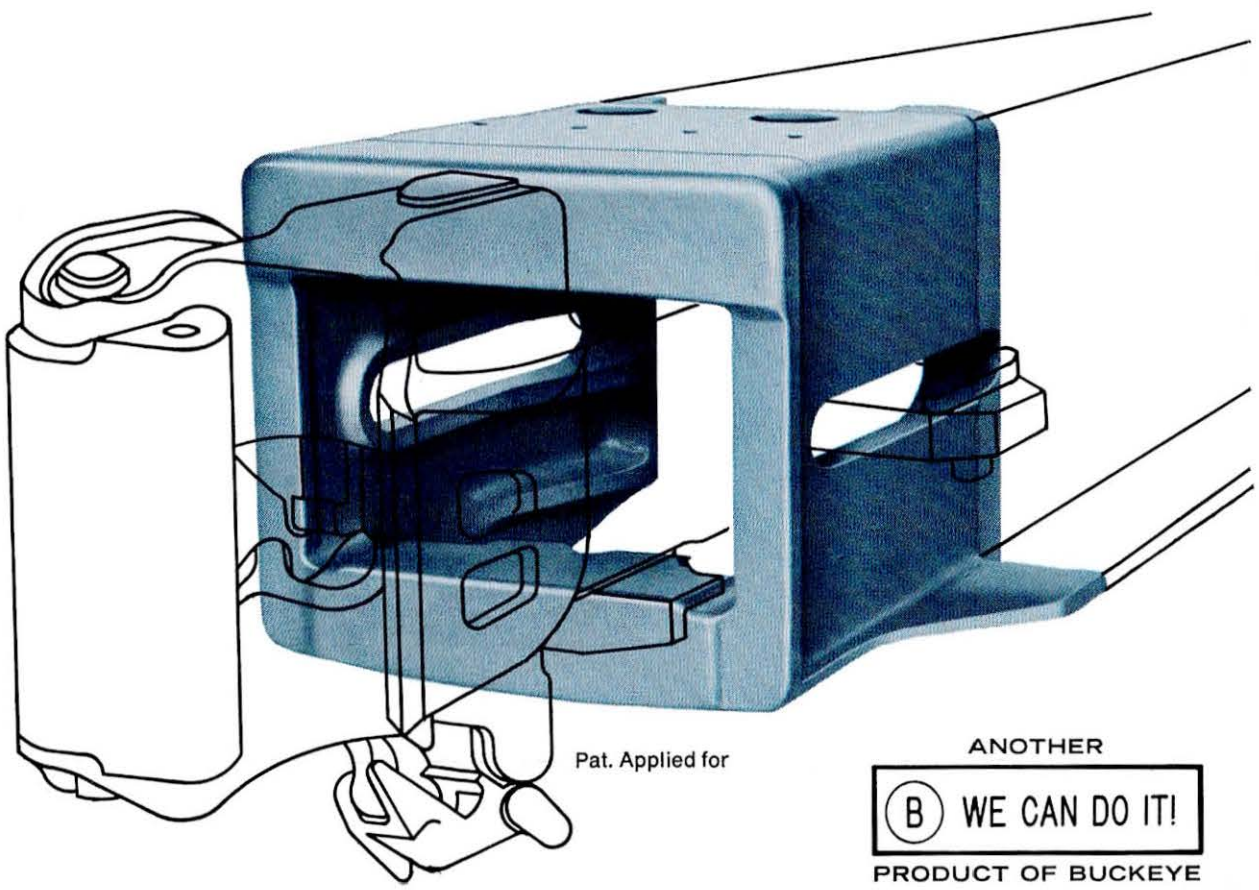

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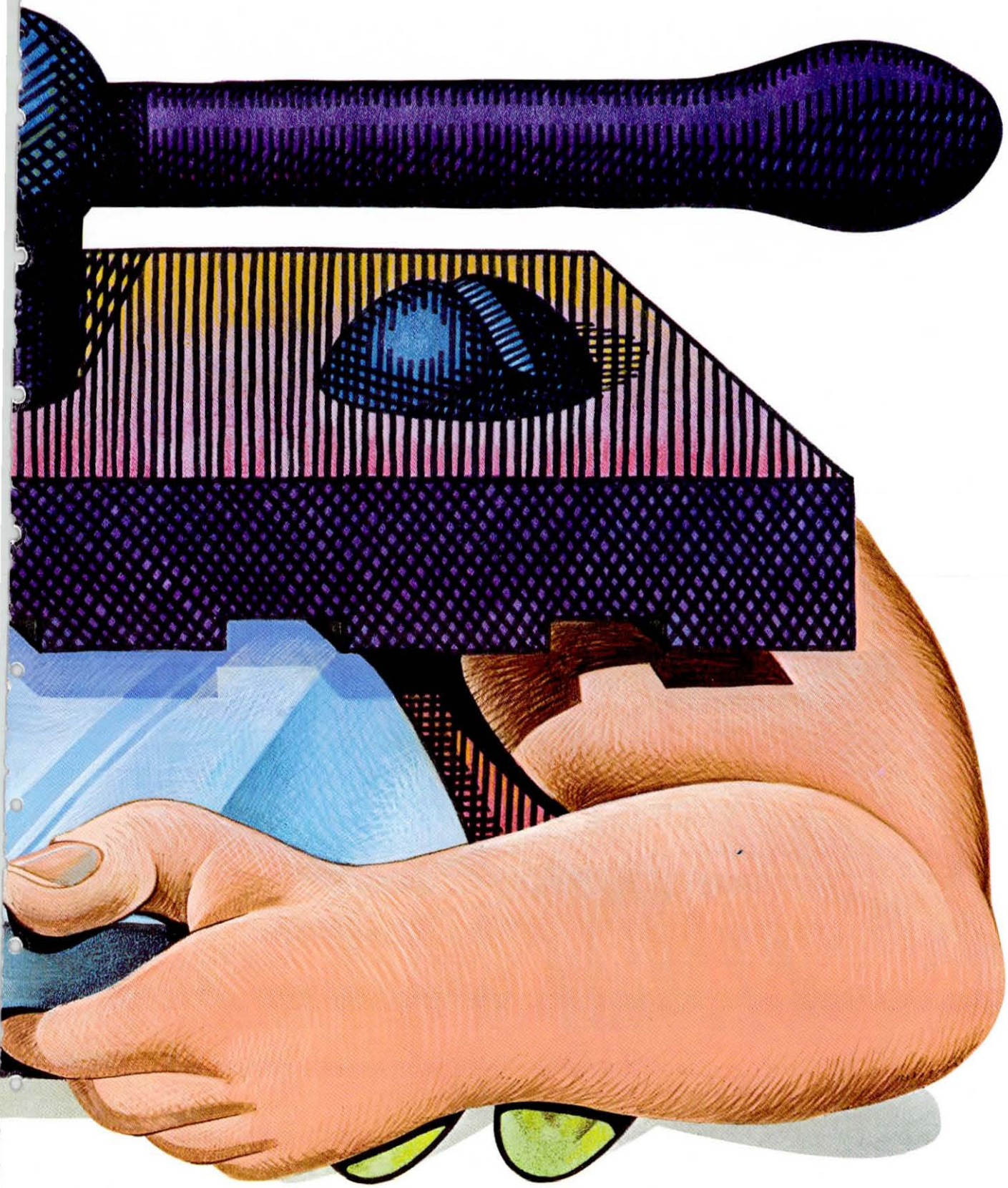

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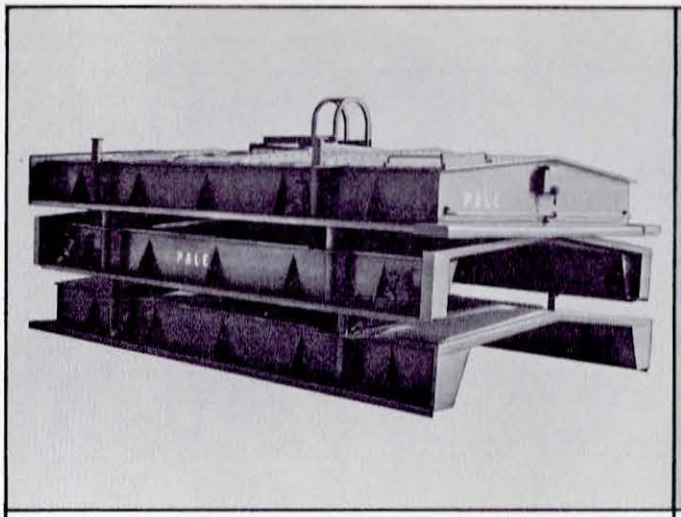
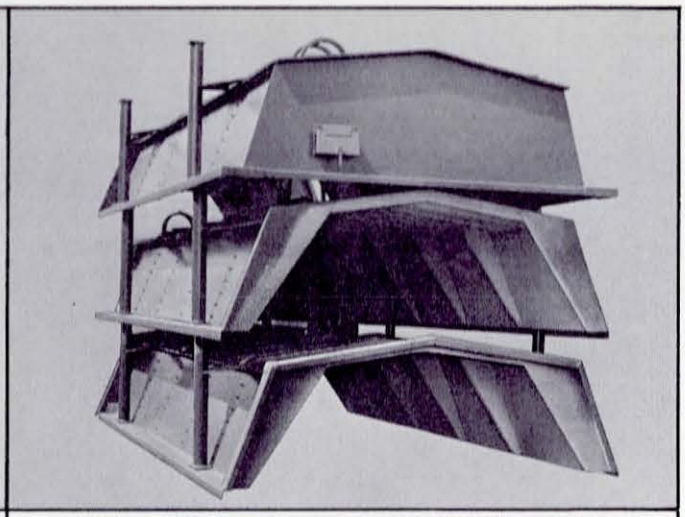


Low-profile 3-section removable roof with end-mounted inspection hatch



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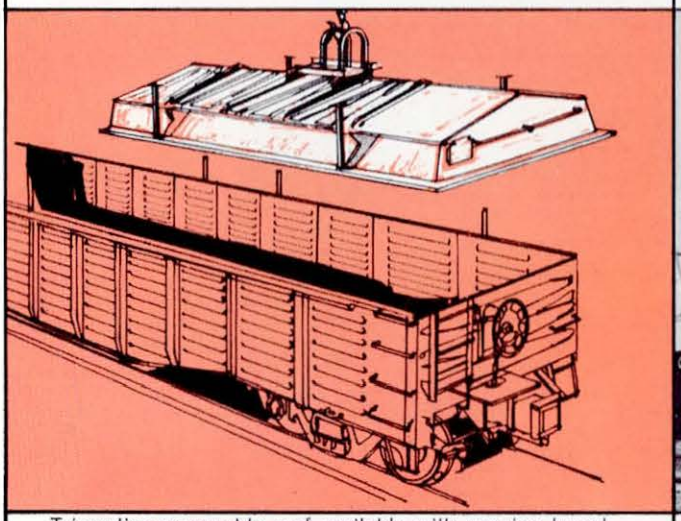

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Metroliner: Good but not good enough

Most of the people who have tried the Metroliner have liked the train, many non-users think they *would* like it and travelers in the Northeast Corridor, consequently, appear to have "conceptualized" the Metroliner (Turbo-train, too) as a potential alternative to flying. These are the conclusions drawn from a survey of Northeast passengers.

Prepared by National Analysts, Inc., Philadelphia, for the FRA's Office of High Speed Ground Transportation, the survey suggests that, in most cases, travelers do not see high speed trains as a "realistic alternative" to the private automobile.

The reactions to the trains are contained in a report on reactions to all modes of passenger traffic in the Northeast. And altogether, the report states, the reactions show choices of modes are based more on routine than on actual decisions.

That conclusion has meaning for the high speed train's rise or fall, the survey says. Mode preferences based on routine are marked by some inertia, and travelers won't usually shake off that inertia unless the qualities of a different mode make an impact on them.

"The respondents in this study made it quite clear that they regard it as the responsibility of the mode to inform them. They should not have to seek out information themselves. This viewpoint emerged consistently on the subject of the Metroliner and Turbo-train, and railroads in general."

As an alternative to flying, however, high speed ground transportation may have to go beyond the Metroliner style to succeed, the survey implies. Many users didn't find enough difference between Metroliners and conventional trains to make them enthusiastic.

The feeling was widespread, the survey shows, that the future of Northeast Corridor travel lies with the development of high speed *ground* modes.

Whatever the form of ground service, the survey says, the vehicles must be considerably faster than present trains but not necessarily as fast as airlines. Terminal locations would make it possible for ground vehicles to provide comparable service with airplanes, even though ground vehicles move more slowly. ■

Watching Washington

FRANK MALONE

OBLIVION FOR COST CASE?

Because of the rail industry's persistence, ICC still is burdened with answering the loaded question: In cases of competition between modes, how do you recognize and protect one mode's inherent advantage—that is, the advantage which derives from particular cost characteristics?

Whether that question ever gets answered is itself an open question.

ICC faces a loaded question because a straight answer, rails claim, would radically change the balance of transport fortunes.

"Recognizing and protecting" means using one mode's costs as a floor or lowest-limit for rates on service that can be offered by competing modes.

The modal costs now considered by ICC are "fully-allocated," that is, distributed over a mode's entire physical plant. With a far bigger plant than trucks or barges, rails come up with the highest cost, even though much of the plant may not be involved in the service in question.

But if the floor were the costs related directly and only to the service, as rails say it should be, then rails would often come up with the lowest cost.

Statements taken by ICC include a Transportation Department endorsement of the rail stand (RA, March 9, p. 47).

With the passing of the April 30 deadline for replies to those statements, immediate responsibility falls on ICC's Division Three (rates and practices), composed of Commissioners Walrath, Bush and Hardin.

Known now as "Sub. No. 1," the question of out-of-pocket versus fully-allocated costs stems from a wider case known as No. 34013. Although the distinction between a docket number and a sub-number of a docket number may seem weak, here it has strong meaning. Rails got 34013 (rules for assembling cost evidence) re-opened as Sub. No. 1 (cost standards in intermodal proceedings) and narrowed to the crucial issue.

As 34013, the case had been around since 1962 when it was opened primarily as a prelude to full ICC approval of cost formulas drafted and used by ICC staff. Then already, rails started chanting: No inflexible approach for variable costs of variable service conditions.

No. 34013 never was resolved. But in the non-resolution, ICC used its fully-allocated-cost thinking to settle cases, including the famous Ingot Molds case. In 1965, ICC ruled against rails who tried to win molds traffic from a truck-barge route between Pittsburgh and Kentucky.

Rails took Ingot Molds to the Supreme Court. They lost. But the Court's refusal to overturn the ICC decision in no way represented approval of ICC's method. In fact, the Court seemed to tell ICC to go back and, once and for all, produce a workable cost policy.

Rails moved quickly to prevent ICC from using the Court action as a pretext for letting the question born by 34013 move un-resolved into oblivion. Although the case is re-opened in sharper focus, however, observers both in and out of ICC see oblivion as the only escape from a volatile question.

The same rail persistence that got the case re-opened may be needed to keep the case from being buried.

TOMORROW'S RAILROADS IN **ACTION**

Bailey Yard brings shippers closer

"How did we ever get along without it?" asks one UP operating man.

By **ROBERT BARTLEY,** Associate Editor

Like a giant magnet, Union Pacific's sprawling automatic classification yard at North Platte, Neb., is drawing rail shippers on both the east and west sides of the nation's geographical centerline closer and closer to their markets.

From its strategic location in the billiard-table-like flatlands in the nation's center, the giant complex is effectively shrinking transcontinental shipping schedules by hours, and even days. Furthermore, to the added delight of shippers and receivers alike, the highly sophisticated, computer-controlled yard is demonstrating that consistency can, in fact, be built into today's rail movements.

The complex reached its present size and capacity about a year and a half ago when a totally new $12.5-million freight classification facility was added to an existing 43-track classification yard. The new facility became the complex's eastbound traffic center. The existing yard, once used for traffic moving both east and west, was assigned solely to westbound traffic. Together they are known as Bailey yard, a huge 105-track automatic classification yard complex sitting astride UP's east-west heartline.

● **"How did we ever get along?"** Ultra-modern Bailey Yard has evolved into one of those phenomena which the UP as well as a number of connecting lines are wondering how they ever got along in the past without. Says O. A. Durrant, manager of UP's Eastern District: "I look at the work this yard is doing for us today and then ask myself how we were ever able to run a railroad without it."

There are indeed some near-miracles being performed at the North Platte yards. On the flats created by the meandering North Platte River, as many as 117,000 freight cars will be hustled through in a month's time. Close to 40 trains a day will be made up, and about 225 diesel-electric locomotives (UP and foreign-line) will be bringing in trains from the east and west, pausing briefly for fuel and a check-up, and then beginning long return trips toward their home grounds—trailing one of Bailey Yard's freshly made-up trains. By actual count, units from 17 different railroads have been spotted in the complex.

● **Expandable yard.** To perform as it does, the North Platte facility must have a lot of things going for it. And it does. It has plenty of elbow room—the new yard alone has 800 acres, and virtually nothing standing in the way of any future expansion. The yard has the quality and quantity of facilities necessary to perform efficient and accurate classification of cars. It also has high-speed, highly efficient classification facilities that not only steer the cars to their proper classification tracks but also put them there smoothly and gently.

> UP's new yard has plenty of elbow room; nothing seems to stand in the way of future expansion

Other support facilities, like communication systems and lighting for night operations, are superb. Its computer-controlled operation and sensitive classifying and car retarder systems have taken any guesswork out of classification and train make-up. Furthermore, as J. E. Guynan, superintendent at North Platte, quickly points out, "We've got a lot of people working for us here who know quite a bit about railroading. This is something extremely important around a yard the size of ours."

● **Congestion eased.** Since coming on stream, Bailey Yard has made itself felt in scores of other points. On UP at Kansas City, for instance, Bailey Yard's appearance has been more-or-less like the introduction of a decongestant. "We used to have almost wall-to-wall box cars at Kansas City," recalls Scotty Durrant. "Now the yard there is fairly clear and moves are being made much faster."

Because of the effective and systematic job of pre-blocking groups of cars going off-line, the North Platte complex is easing yard congestion of other railroads and contributing considerably to consistency in service. Here are just a few of the blocks of cars being formed at North Platte for connecting points and off-line yards:

Westbound—Salt Lake City forwarder traffic, rail trailers, mail and express; traffic for Western Pacific at Salt Lake City; other Salt Lake City traffic including the Denver & Rio Grande Western connection and traffic destined for UP stations between Salt Lake City and Las Vegas; traffic at Yermo, Calif., for Barstow and other Santa Fe connections; traffic for the Southern Pacific connection at Colton and other California stations; auto parts traffic for SP at Warm Springs and Milpitas in California; traffic for the giant warehousing and industrial complex in Clearfield, Utah.

"In fact," advises John C. Kenefick, executive vice president, "the five special blocks we make for the Southern Pacific give customers the same service as a single-line haul."

The list of pre-blocks for westbound traffic goes on and on. Altogether, the UP makes up 32 westbound blocks of cars at North Platte. On top of all that, it separates such empty equipment as RS reefers, mechanical reefers, narrow-door box cars and wide-door box cars.

The list of eastbound blocks is also impressive. Bailey Yard will pre-block for such road connections as: Burlington Northern at Galesburg, Ill., or at Chicago and beyond, at Lincoln, Neb., and St. Louis. There is also a special block of long cars and Lincoln ice bunker cars. Rock Island gets, for example, blocks of cars for Des Moines and north, for Topeka, for Kansas City, and so on. Chicago & North Western gets a Proviso manifest block, a TOFC

to their markets

traffic block for Chicago and beyond, plus five others. The Milwaukee gets three blocks, including traffic short of Chicago, plus perishables, for example, which go beyond. Illinois Central gets two blocks, for traffic to Rockford and Clinton, Ill., and another for points beyond. Norfolk & Western gets manifest blocks to, for instance, Bellevue, Ohio, and Decatur, Ill., plus three other blocks along its system. Missouri Pacific gets blocks that go to numerous destinations in the South and Southeast.

Furthermore, Bailey Yard is making up several blocks of cars for points along the eastern portion of its own system.

● **Run-throughs via Bailey.** Aside from all the blockings for off-line connections it is making at North Platte, UP also has run-through arrangements with nine other railroads that help speed freight on to destinations. The yard is the hub of some run-throughs that stretch all the way from the Pacific Northwest to as far east as Florida with the Frisco, MoPac, Southern, and Seaboard Coast Line, as well as the UP, participating.

The tremendous amount of pre-blocking taking place at North Platte indicates what UP is doing for its customers. UP has an interesting philosophy regarding this strategy. It goes something like this: If what we're doing at North Platte is good for the railroad industry, it's got to be good for railroad industry customers.

UP goes on to add that the shipper who doesn't get the service he feels he needs while using one type of transportation, will spend his dollar on some other type where he can get the service. So, UP concludes, let's keep the shipper on the railroads, first of all, by giving him the service he must have. Bailey Yard and the UP twin-track mainline are doing their utmost to keep shippers rail-oriented. And UP is gaining its share of revenues from this service philosophy.

● **$10-million diesel shop coming.** Business is so brisk at North Platte, for that matter, that UP is spending another $10 million there to further improve the operation. A new 11-track, 144,000-square-foot diesel-electric locomotive maintenance and servicing facility is being added now along the south-central edge of Bailey Yard. This maintenance center will have the capacity to serve a fleet of 400 units. Up to 200 units will be serviced and repaired in a single day, according to Guynan.

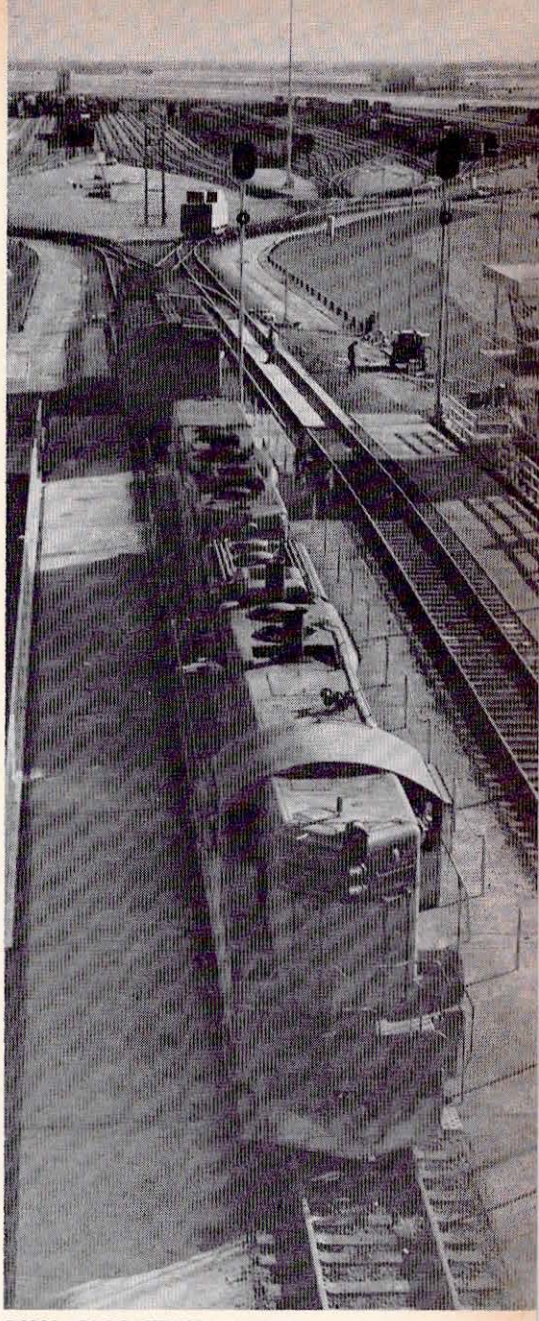
Of the 11 tracks going into the new prefabricated metal structure, five will handle running repairs, five are designed for heavy repairs, and the remaining track will have a wheel-truing machine. The building will have two single-axle drop pits plus one full drop pit. The L-shaped building will also have a three-story service and material area, locker room and office complex. To permit easy access to all the repair tracks, special personnel tunnels will be installed below the floor of the structure and across it at strategic locations. The new facility is scheduled to open early in 1971.

There's a significant feature of the new facility that shows UP's concern for ecological problems. All industrial waste water will be treated and cleaned at the site by a special $250,000 treatment plant.

UP's giant 6,600-hp Centennial locomotives, used extensively for manifest train operations into Los Angeles, make frequent appearances at Bailey Yard. These huge units, of which there are 25 on UP property now, will be serviced at the new diesel shop when it comes on-line. Another 22 units, scheduled for delivery this year from Electro-Motive Division of General Motors, will also receive their servicing there.

● **More work for the computer.** Thus, the North Platte complex will soon be playing an even more important role in UP operations. It's highly unlikely, too that UP management will cease to make still more refinements in the classification yards themselves over the next few years. Already on tap for October is expansion of the work the computer does.

At the present time, the controller in the crest tower on the west end is actually throwing the switches from his control console and issuing instructions to the pinpuller via radio. Come October, though, the computer will take over everything except the issuing of instructions to the man uncoupling the cars at the crest.

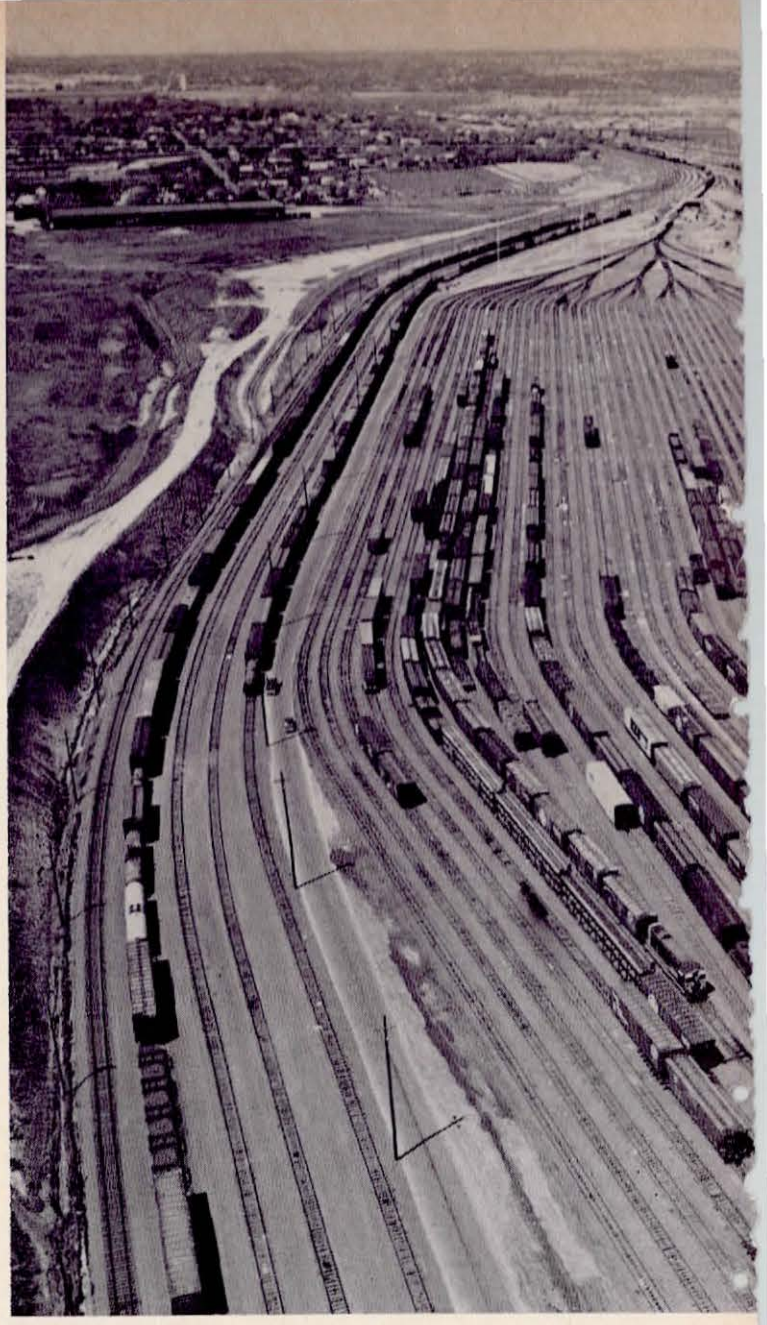


DUAL CLASSIFYING SYSTEM leads into 62-track bowl of UP's Bailey Yard.

Because the yard has a dual track approach, UP could classify two trains simultaneously. It is not doing so now, but it is making full use of the two-track approach at the crest. Presently, while one train is being classified on one track, a second train on the adjacent track is moving into position. Soon, the second train is being classified.

UP plans that as more improvements are made, including full use of advanced electronic systems, North Platte will have an even greater impact upon service and speed of delivery. "The more consistent and dependable your service becomes, the better your chances are of attracting business," says Scotty Durrant. "Bailey Yard is going to continue to attract more traffic to our railroad."

TOMORROW'S RAILROADS IN **ACTION**



Expanded Argentine yard measures up to the job

Extra track room keeps trains moving fast.

By **GUS WELTY,** Senior Editor

If you know the difference between night and day, you have a fair idea of the difference between Santa Fe's Argentine Yard a year ago and Argentine Yard today.

This doesn't mean that the old Argentine, at Kansas City, Kans., did a bad job. It does mean that the new Argentine, built at a cost of $12 million, is doing such a good job that even the most conservative Santa Fe people are reaching for the superlatives.

Argentine has long been regarded as the hub of Santa Fe's freight operations. But with growth in business—and with increased emphasis on service speed and reliability—operating officers were finding the yard's capabilities strained to the limit. The original Argentine hump yard, opened in 1949, was designed primarily for westbound classification. Eastbound classification was handled through four small flat yards, though in heavy-traffic periods some eastbound business was classified over the westbound hump. Inevitably, there were delays.

● **Past—and present.** F. A. Beauchamp, superintendent at Argentine, recalls what things used to be like—and how they are today:

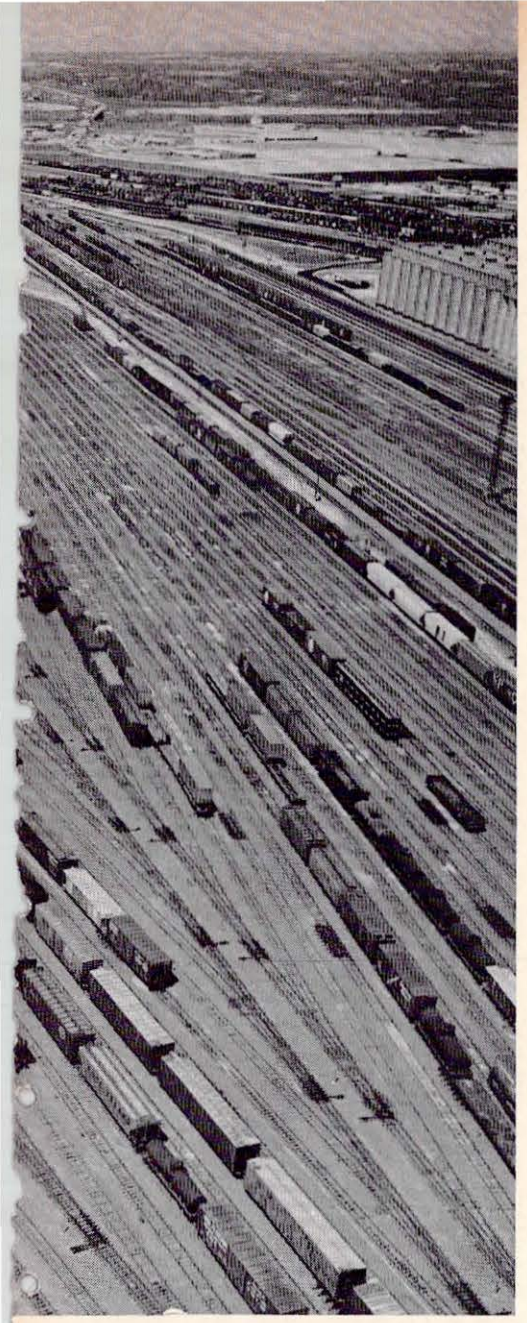
"With the yard layout as it was, we often had to hold eastbound trains west of the yard. We just didn't have enough track space. As a result, on the weekend—when our heaviest business shows up at Argentine—we would encounter our greatest difficulties. Since we began humping in the new eastbound yard, we have not held out a single train for lack of track room.

"We're also seeing a speedup in operations over the westbound hump. Before, when we were really pressed, we did put some eastbound trains over the westbound hump. This put an extra strain on operations there—because our westbound business is usually at its heaviest at the same time in the week as the eastbound.

"Now, with the eastbound yard in full operation, we're staying current—on both sides of the yard."

In the new setup, Santa Fe is also realizing significant time-savings through improved motive-power utilization. Switching units are fueled and serviced in the yard; non-productive trips to the shop area are made only for required inspection and repair. In addition, the number of on- and off-duty points in the yard complex has been increased from two to six—which has led to a substantial reduction in the time-loss involved in getting a crew and unit from on-duty point to work location and back to tie-up point.

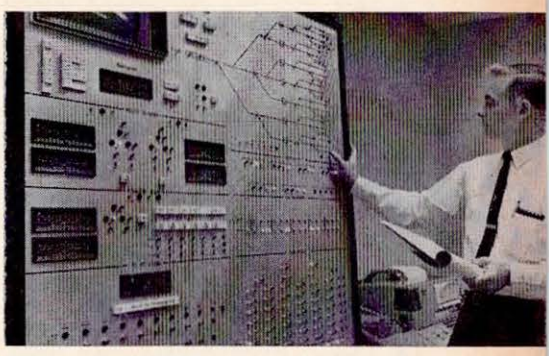
● **Everything's up-to-date . . .** Any way you cut it, Santa Fe has something impressive to show for its $12-million investment. The eastbound class yard, WABCO-equipped, is 48 tracks wide, fanning out from the master retarder



NIGHTTIME IS ALMOST LIKE DAYLIGHT AT ARGENTINE, thanks to the installation of more than 200,000 watts of floodlighting on 10 120-foot towers and 310 poles.

CLASSIFICATION OPERATION is monitored in Argentine's eastbound tower by a yardmaster armed with a print-out and backed up by a display indicating next eight cars to be classified.

Modern technology plays a big role



TWO COMPUTERS are on-line continuously. Primary unit directs process control and maintains direct communication with terminal data center computer. Second unit can take over if needed.

and six group retarders. Supporting facilities include a 10-track receiving yard, a nine-track departure yard and an 11-track transfer yard. Standing-car capacity of the eastbound facility is 4,510 cars —but nothing stands for very long. Currently, Santa Fe is running about 2,000 cars a day through the eastbound yard —all on an up-to-date basis.

At the heart of the yard data system is an IBM 360/30, linked with the road's computer center at Topeka and with two Honeywell DDP 516 process-control computers in the hump yardmaster's office.

Advance consists and update data flow into Argentine via the Topeka center. On arrival, inbound trains go through an inspection and a computer check for diversions and are then ready for classification. On command, the 360/30 transmits an edited list to the process-control computers, with simultaneous print-out in the hump yardmaster's office. Classification priorities are determined by the hump yardmaster, bowl yardmaster and assistant superintendent. On command, the hump computer recalls the correct cut list (from memory which will store up to four 150-car lists), and classification begins.

● **Someday, checks by ACI.** Eventually, Santa Fe will be making its accuracy checks on consist through ACI. Now, a visual check is made just west of the yard at Turner, Kans. Other checks have been built into the classification process to catch any variations between computer data and the consist.

As a train is being humped, for example, a cathode ray tube linked with the hump computer gives the conductor and yardmaster an indication of the next eight cars to be classified. If any class-track rerouting is required, the hump yardmaster merely types it up to the computer. Any "unexpected" car —a car not on the hump list—can be routed to a hold track for later classification at the press of a button.

● **Automatic control.** Santa Fe is using four 2,400-hp units on the eastbound hump. They are operated in tandem and are equipped for remote-control operation, once the engineer places on-board controls in "automatic" position. The hump yardmaster, by radio, selects the unit and activates the hump signal and a cab signal. After getting the locomotive moving, the engineer goes to "automatic" and the yardmaster controls the unit's movement until the train is classified—with a selection of seven humping speeds between 1 and 3 mph. In an emergency, locomotive-stop control is available to the hump yardmaster, hump conductor and/or engineer.

In building the new Argentine, Santa Fe did run into a few problems with geography. The terminal layout is squeezed between the Kansas River and the river bluffs. It stretches out for almost 10 miles, with width varying from about a mile and a quarter down

BETTER LOCOMOTIVE SERVICE
Santa Fe is getting new efficiency from yard power, in several ways. Among them: units are fueled and serviced in the yard; trips to the shop area are minimized.

to a mere 180 feet. Fortunately, however, Santa Fe engineers were able to work out a construction schedule which minimized interference with operations. With the computer lending an assist, the yard-builders relied on CPM and PERT—the Critical Path Method to develop the over-all construction schedule and the Project Evaluation and Review Technique to monitor progress and forecast the physical and financial position of the project at any point during its life.

● **Close coordination.** As Fred Beauchamp puts it, "We were fortunate that the eastbound bowl could be built adjacent to the existing yard. We were able to get most of our work there completed before we began phasing out some existing tracks so work could be done on supporting tracks north of the bowl.

"Once we got to that stage, last June, the operating department worked very closely with the engineering department to phase out one or two tracks at a time. By working things out this way, we were able to operate with a lot less congestion and delay and confusion than we might have had. And when the eastbound hump was ready to be phased in starting last November, we had really experienced very little delay which could be blamed on the new construction."

From an operating standpoint, the phasing-in was done just as methodically. There were, of course, extensive tests to determine yard characteristics and hump-control calibrations. Cars of various types were shoved over the hump and routed to each of the bowl tracks: "The behavior of each car was measured—and from this record, the unique characteristics of each track were evaluated to determine rollability. These characteristics were then translated to the computer memory."

● **Blocking improved.** Studies were also made to develop new blocking patterns, principally for run-through operations and for Illinois Division points as well as for Chicago deliveries. For example, eastbound Argentine is now putting out two blocks for Penn Central via a Streator, Ill., connection and two blocks for the East for delivery via Toledo, Peoria & Western at Lomax, Ill.

Blocks for Chicago include the TOFC/COFC terminal, local deliveries and delivery to the Belt Railway.

Up to this point, Beauchamp says, Argentine has not blocked for individual eastern-road connections through the Chicago gateway. But that kind of operation is on the future-list—and when it comes into being, Argentine will be able to show even greater contributions to service improvement.

Santa Fe shippers will be able to take a look at this new freight-classification plant May 13, when the formal ribbon-cutting ceremonies are scheduled.

The customers, no doubt, will be impressed. Each new yard that is opened is just a bit better—sometimes a lot better—than whatever came before.

But the most impressive feature of the yard won't be the computers or the 48-track bowl or the hump engines equipped for automatic operation. The most impressive feature—to a shipper—will be found in one simple fact: Since eastbound Argentine went to work, Santa Fe is reporting a 50% reduction in the average car's time in, through and out of the yard.

TOMORROW'S RAILROADS IN ACTION

PC expands its Chicago TrailVan facilities

Move is dictated by the growth of trailer/container traffic.

By **R. E. DOVE**, Associate Editor

A major expansion program of Penn Central's TrailVan facilities at Chicago, costing more than $1.2 million, is scheduled to go into service this month. As a result, PC will be able to handle more than 2,000 loaded trailers daily to and from Chicago, compared with about 800 in the past.

"TrailVan traffic has grown about 10% at Chicago each year," says Kenneth E. Smith, vice president and general manager, Western Region. "All indications are that it will continue to grow at the same rate. In the last year, we have added four TrailVan trains (two in and two out) to the 10 trains previously operated at Chicago. This project is necessary because Penn Central wants to do everything it can to provide facilities that will attract shippers. Our advanced loading methods here give us flexibility and speed which, it is anticipated, will promote additional traffic."

Penn Central has three TrailVan loading facilities at Chicago—at its 43rd Street, 55th Street and Englewood yards. The improvement program was concentrated at the 55th Street and Englewood yards.

Work in revamping the 55th Street yard was begun in late 1968 for TrailVan operations. This had been a classification yard for a variety of freight equipment, including numerous types of box cars. The latter, in most instances, are now being handled through other Penn Central yards in Chicago and through the Indiana Harbor Belt yard at Blue Island, Ill. Before alterations

TWO MOBILE CRANES of this type are speeding loading and unloading operations at Penn Central's 55th Street yard in Chicago.

began, the 55th Street yard had nine circus-type loading ramps and 35 classification tracks.

Removing part of the ramps and trackage, the road has recently built two new tracks, 14 feet apart, each with a capacity of 46 TrailVan cars. Bituminous-concrete pavement strips 60 feet wide were constructed to serve each side of the dual tracks.

● **Go to overhead loading.** But the major conversion at the 55th Street yard was to change from the circus-type to the overhead-crane type of trailer transfer. The circus type does not allow selectivity and as a result causes delay. Cranes permit greater flexibility because the sequence of unloading can be arranged to suit the priority of selection.

Two mobile gantry cranes (Paceco Transtainers), having a clear span of 71 feet, were furnished at the 55th Street yard. Each one serves about half the length of the two tracks as well as adjacent driveway strips. In operation, each crane positions itself to span one pavement strip and the two tracks and unloads the vans from the cars on that side. When all cars have been unloaded, the cranes position themselves to span the tracks and the pavement on the opposite side, then work back by loading outbound units onto the same cars.

● **Container handling.** The yard at Englewood was considered a combination classification and TrailVan yard. Under the new arrangement, this yard will now handle the road's container units, with and without wheels. The former box-car traffic has been diverted to the Blue Island yard.

Major improvements in this yard included construction of two additional through tracks, each having a capacity of 30 TrailVan cars, and a bituminous-concrete pavement strip, 90 feet wide by 3,000 feet long. Loading and unloading is effected by the use of two Piggypackers, which handle containers on chassis, and Commando vehicles, which handle containers without chassis, for placing them on bogie wheels.

● **Has room to grow.** Both the 55th Street and Englewood yards have additional space that can be used for expansion. This is considered an essential requirement by the road because of the ever-increasing TrailVan traffic. In 1970 the outbound business alone increased 14% in January over a year ago, 7% in February and 8% in March. Presently, this business averages from 7,000 to 10,000 outbound trailers a month and from 5,000 to 7,000 inbound trailers.

● **Operating procedure.** For Plan II business, shippers call the traffic dispatcher to arrange for a pick-up. At that time, the dispatcher obtains information on the destination of the unit so he can plan where the trailer is to be placed on the train. A tractor is sent to pick up the trailer and haul it to the yard where it is inspected. If approved for loading, the driver is told where to set out the trailer and the yard foreman sees to it that the trailer is loaded on the assigned car.

For Plan II½ business, the shipper's driver brings the trailer to the yard, where it is inspected. If approved, the driver sets out the trailer and he is released. Railroad forces then load the trailer on the assigned car. The same procedure applies to traffic received from other railroads and over-the-road truck-hauled trailers, which fall into the Plan V category. All trailers delivered within one hour before train-departure time are accepted. Trains depart at the 43rd Street yard and the 55th Street yard at 11:10 p.m., and from the Englewood yard at 1 a.m. They arrive at their East Coast destinations about 25 hours later.

To guard against pilferage and theft, the railroad has begun to enclose parking areas and yard with fencing. In addition, it has equipped 1,000 of its 11,000 trailers and containers with air-operated spring-type door locks. The locks can be actuated only when the tractor is hooked up to the unit. The road reports they have been instrumental in considerably reducing pilferage. ■

Wabco entering propulsion field

Solid-state PWM system developed with Reliance Electric, tested on Cleveland Transit.

Westinghouse Air Brake is betting that solid state is a solid base on which to promote a rapid-transit propulsion system. Keith Bunnel, Wabco Vice president, identifies as features of the new system the substitution of a-c traction motors for the normal d-c type and of solid-state equipment in place of electro-mechanical switch gear. He points out that founder George Westinghouse long ago recognized the advantages of a-c over d-c power systems.

William Ayres, vice president of the Air Brake Division, reports that "testing has demonstrated the major advantages of the new system—improved control of propulsion at all speeds, lower maintenance through substitution of a-c for d-c propulsion units, and added economies of the new regenerative capability."

Regeneration, the ability of a propulsion system to return energy to the power distribution system, is achieved by temporarily converting the traction motors to generators with the energy so developed serving to slow the vehicle.

It does not differ greatly in concept from dynamic braking, where current developed in the motors-turned-generators is dissipated in resistance units on the vehicle itself.

When energy generated on the cars is returned to the power system, it can be utilized to propel other cars and reduce system power costs. When a vehicle's momentum is converted to usable electrical energy, rather than being dissipated in heat, tunnels remain at a lower temperature, reducing the air-conditioning and ventilating loads.

● **Development program.** Five years ago Wabco initiated a program to determine the future needs of rapid-transit propulsion. Several requirements were apparent to the engineers:

—Traction motor and switch gear maintenance should be minimized;

—Rising operating costs made regenerative braking attractive;

—Stepless control would increase passenger comfort and be a natural adjunct to greater automation;

—Improved adhesion would control some wheel problems associated with high-performance cars.

It was quickly decided that the d-c distribution system was here to stay. Bay Area Rapid Transit, for instance, had a choice of electrical current delivery methods and opted for 1000-volt d-c third rail. Wabco engineers then evaluated chopper-controlled d-c motor drives, resistance chopper systems, phase-controlled rectifiers and cycloconverters, all of which are being developed or tested for rapid-transit propulsion. For the Wabco approach it was decided to use another solid-state control technique—pulse width modulation. At this stage Wabco teamed with Reliance Electric for implementing the solid-state technology.

"Testing demonstrated major advantages of the new system—improved control, lower maintenance, regenerative capability."
. . . William Ayres

● **Induction motors.** Pulse width modulation functions to take the 600-volt d-c from the wayside and convert it to variable-voltage, variable-frequency, three-phase power for delivery to a-c squirrel cage induction motors. By continously monitoring motor speed and combining this with torque demand, the a-c voltage and frequency are regulated to produce the output indicated by the controller setting.

The inverters, devices for conversion of d-c to a-c, can be regulated to achieve the regenerative braking effort. If the power system cannot accept current from a car in regenerative braking, Wabco has arranged to have the effort of the tread-brake system blended to account for the deficit in retardation.

After a computer fixed the basic parameters and a laboratory model had been dynamometer tested, it was decided to omit full-scale dynamometer testing and move immediately to evaluation on a rapid transit car in regular service.

● **CTS cooperation.** It was at this time that arrangements were made with Cleveland Transit System to apply prototype equipment to one of the CTS "Airporter" cars. Installation was completed in the summer of 1969. While the car operated in regular trains it did not carry passengers, since a number of seats had been removed for installation of the prototype solid-state devices which make possible a-c traction motors. Although these inverters and controls had not been packaged for undercar mounting in this original installation, Wabco engineers anticipate no difficulty in doing this.

The original air brake controls were replaced with a Wabco RT-5 system so that continuous brake blending would be available for constant retardation despite variations in the ability of the power system (catenary, in the case of CTS) to accept current produced in regeneration.

Five months of testing showed the PWM system "surprisingly reliable," according to J. R. Pier, manager—mass transit engineering. The a-c motor performed well, running cooler than anticipated. Problems of line gaps were solved. No radio or signal-system interference was discerned.

● **Next phase.** Wabco expects now to move to a full-scale test of a three-car CTS train in revenue service which should start in about a year. Such evaluation is expected to last another 12 months. During this program several factors will be studied:

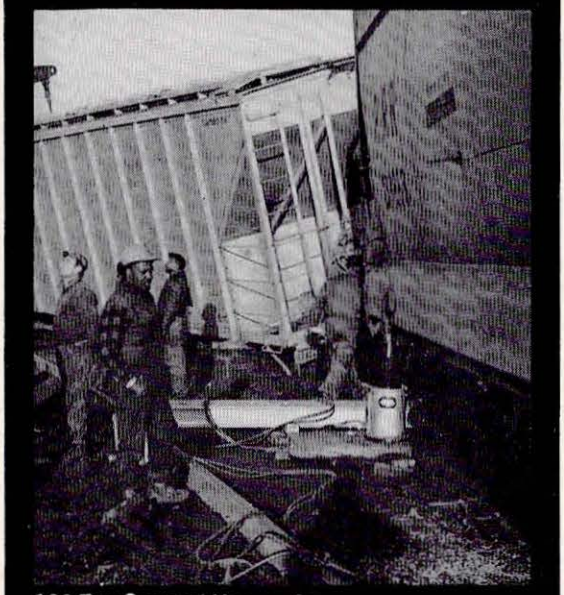
—Reliability and maintainability of the PWM equipment;

—Actual power saving from the regenerative brake (studies indicate 20 to 30%);

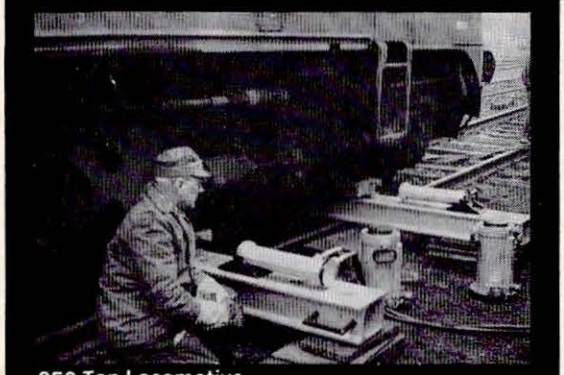
—Passenger reaction to the control so far as comfort is concerned;

—Wheel performance with all axles coupled electrically through the a-c traction system. ■

115 Ton Switch Yard Locomotive



100 Ton Covered Hopper Car



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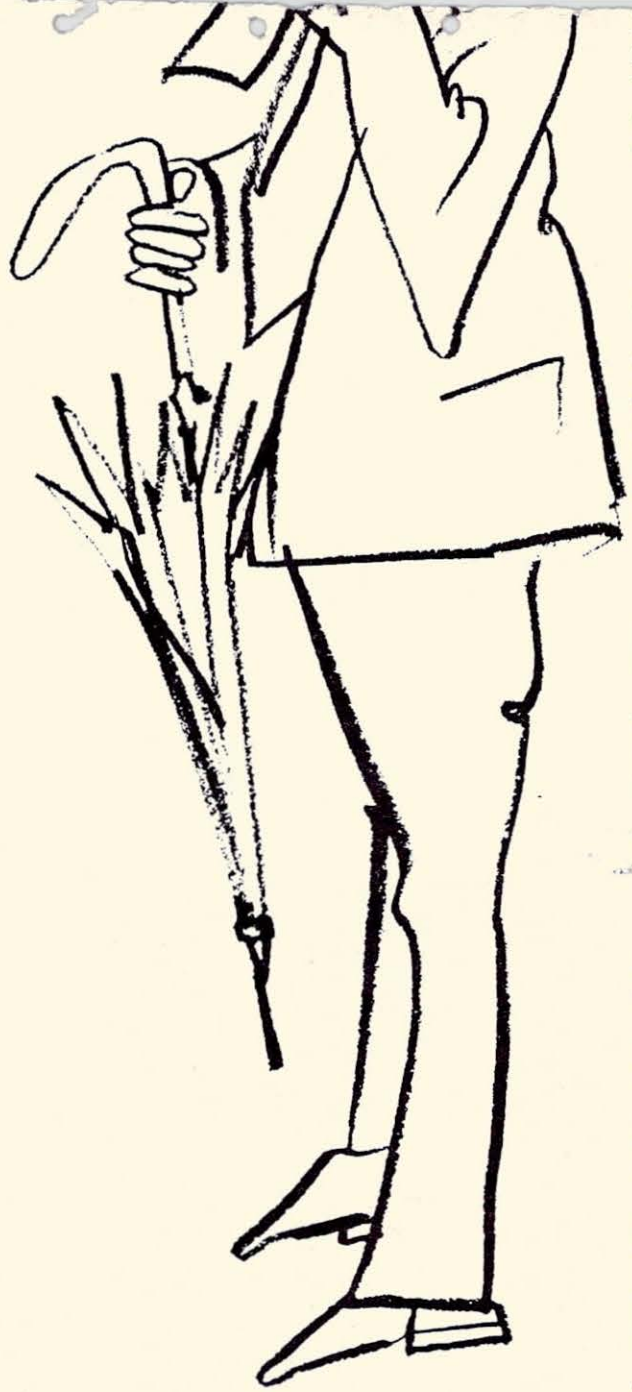

yours to invest or to put back in your business.

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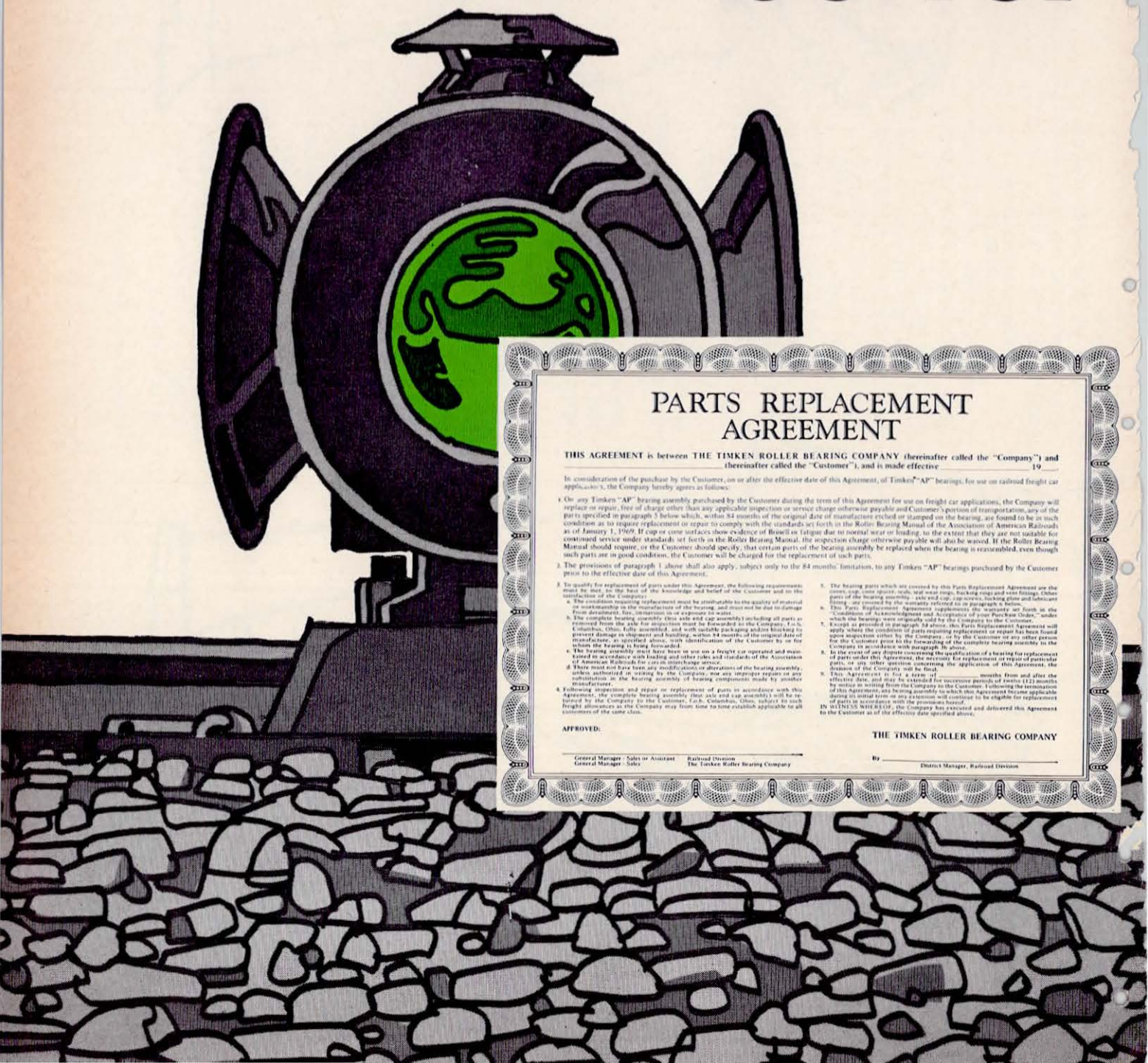


PARTS REPLACEMENT AGREEMENT

THIS AGREEMENT is between **THE TIMKEN ROLLER BEARING COMPANY** (hereinafter called the "Company") and _____ thereinafter called the "Customer"), and is made effective _____ 19__

In consideration of the purchase by the Customer, on or after the effective date of this Agreement, of Timken "AP" bearings, for use on railroad freight car applications, the Company hereby agrees as follows:

1. On any Timken "AP" bearing assembly purchased by the Customer during the term of this Agreement for use on freight car applications, the Company will replace or repair, free of charge other than any applicable inspection or service charge otherwise payable and Customer's portion of transportation, any of the parts specified in paragraph 5 below which, within 84 months of the original date of manufacture etched or stamped on the bearing, are found to be in such condition as to require replacement or repair to comply with the standards set forth in the Roller Bearing Manual of the Association of American Railroads as of January 1, 1969. If cup or cone surfaces show evidence of Brinell or fatigue due to normal wear or loading, to the extent that they are not suitable for continued service under standards set forth in the Roller Bearing Manual, the inspection charge otherwise payable will also be waived. If the Roller Bearing Manual should require, or the Customer should specify, that certain parts of the bearing assembly be replaced when the bearing is reassembled, even though such parts are in good condition, the Customer will be charged for the replacement of such parts.

2. The provisions of paragraph 1 above shall also apply, subject only to the 84 months' limitation, to any Timken "AP" bearings purchased by the Customer prior to the effective date of this Agreement.

3. To qualify for replacement of parts under this Agreement, the following requirements must be met, to the best of the knowledge and belief of the Customer and to the satisfaction of the Company:
   a. The condition requiring replacement must be attributable to the quality of material or workmanship in the manufacture of the bearing, and must not be due to damage from derailment, fire, immersion in or exposure to water.
   b. The complete bearing assembly (less axle and cap assembly) including all parts as removed from the axle for inspection must be forwarded to the Company, Tech, Columbus, Ohio, fully assembled, and with suitable packaging and/or blocking to prevent damage in shipment and handling, within 84 months of the original date of manufacture, as specified above, with identification of the Customer by or for whom the bearing is being forwarded.
   c. The bearing assembly must have been in use on a freight car operated and maintained in accordance with loading and other rules and standards of the Association of American Railroads for cars in interchange service.
   d. There must not have been any modifications or alterations of the bearing assembly, unless authorized in writing by the Company, nor any improper repairs or any substitution in the bearing assembly of bearing components made by another manufacturer.

4. Following inspection and repair or replacement of parts in accordance with this Agreement, the complete bearing assembly (less axle and cap assembly) will be returned by the Company to the Customer, f.o.b. Columbus, Ohio, subject to such freight allowances as the Company may from time to time establish applicable to all customers of the same class.

5. The bearing parts which are covered by this Parts Replacement Agreement are the cones, cup, cone spacer, seals, seal wear rings, backing rings and vent fittings. Other parts of the bearing assembly - axle end cap, cap screws, locking plate and lubricant fitting - are covered by the warranty referred to in paragraph 6 below.

6. This Parts Replacement Agreement supplements the warranty set forth in the "Conditions of Acknowledgment and Acceptance of your Purchase Order," under which the bearings were originally sold by the Company to the Customer.

7. Except as provided in paragraph 3d above, this Parts Replacement Agreement will apply where the condition of parts requiring replacement or repair has been found upon inspection either by the Company, or by the Customer or any other person for the Customer prior to the forwarding of the complete bearing assembly to the Company in accordance with paragraph 3b above.

8. In the event of any dispute concerning the qualification of a bearing for replacement of parts under this Agreement, the necessity for replacement or repair of particular parts, or any other question concerning the application of this Agreement, the decision of the Company will be final.

9. This Agreement is for a term of _____ months from and after the effective date, and may be extended for successive periods of twelve (12) months by notice in writing from the Company to the Customer. Following the termination of this Agreement, any bearing assembly to which this Agreement became applicable during its initial term or any extension will continue to be eligible for replacement of parts in accordance with the provisions hereof.

IN WITNESS WHEREOF, the Company has executed and delivered this Agreement to the Customer as of the effective date specified above.

APPROVED:

THE TIMKEN ROLLER BEARING COMPANY

_____
General Manager - Sales or Assistant General Manager - Sales
Railroad Division
The Timken Roller Bearing Company

By _____
District Manager, Railroad Division

agreement, get a bearing.

Your Timken® "AP" bearing performance record proves it.

In fact, this 15-year Timken "AP" bearing performance record enables us to provide four maintenance savings in our Parts Replacement Agreement.

1. You get protection against brinelling from impact. Where no derailment damage is evident.

2. All parts of every Timken "AP" bearing are covered. Including seals, but excluding the end-cap assemblies.

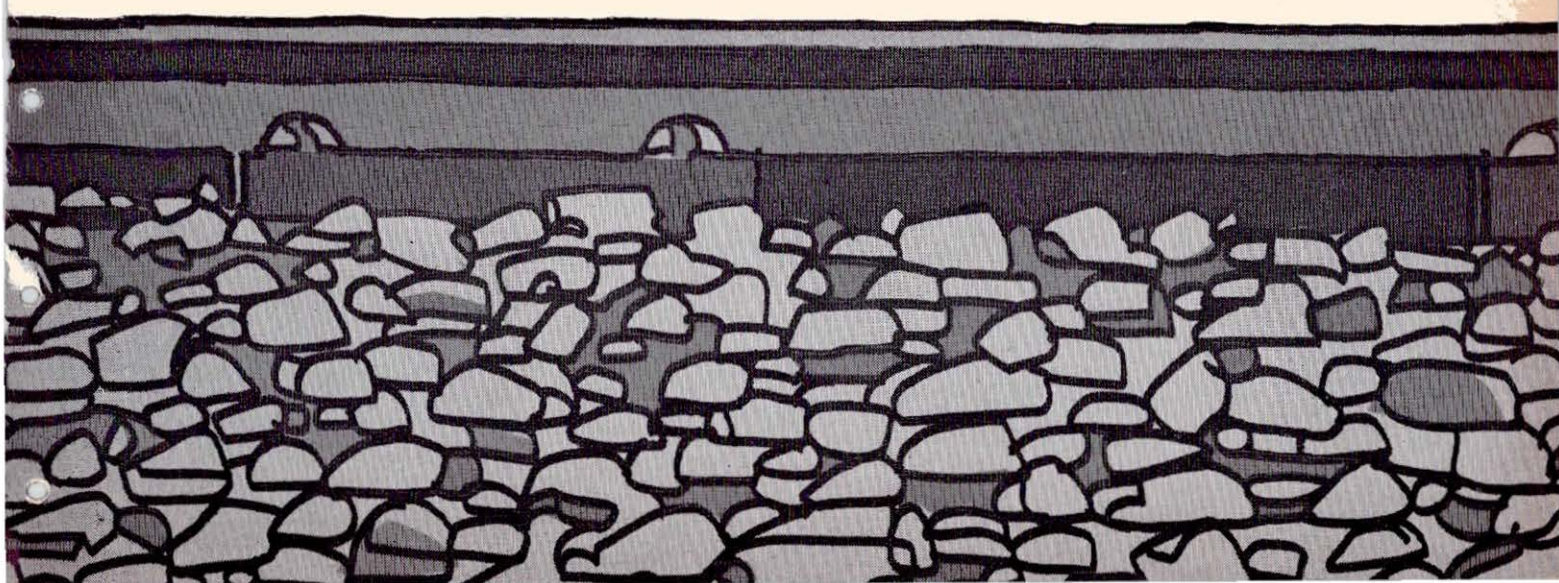
3. You save on inspection charges under specified conditions.

4. You get all this on Timken "AP" bearings manufactured up to 7 years ago. Because only Timken "AP" bearings have performance to match this agreement.

The Timken Company, Canton, Ohio 44706. Timken bearings sold in 133 countries. Manufacturing in Australia, Brazil, Canada, England, France, South Africa and the U.S.A.

Our word is as good as our bearing.

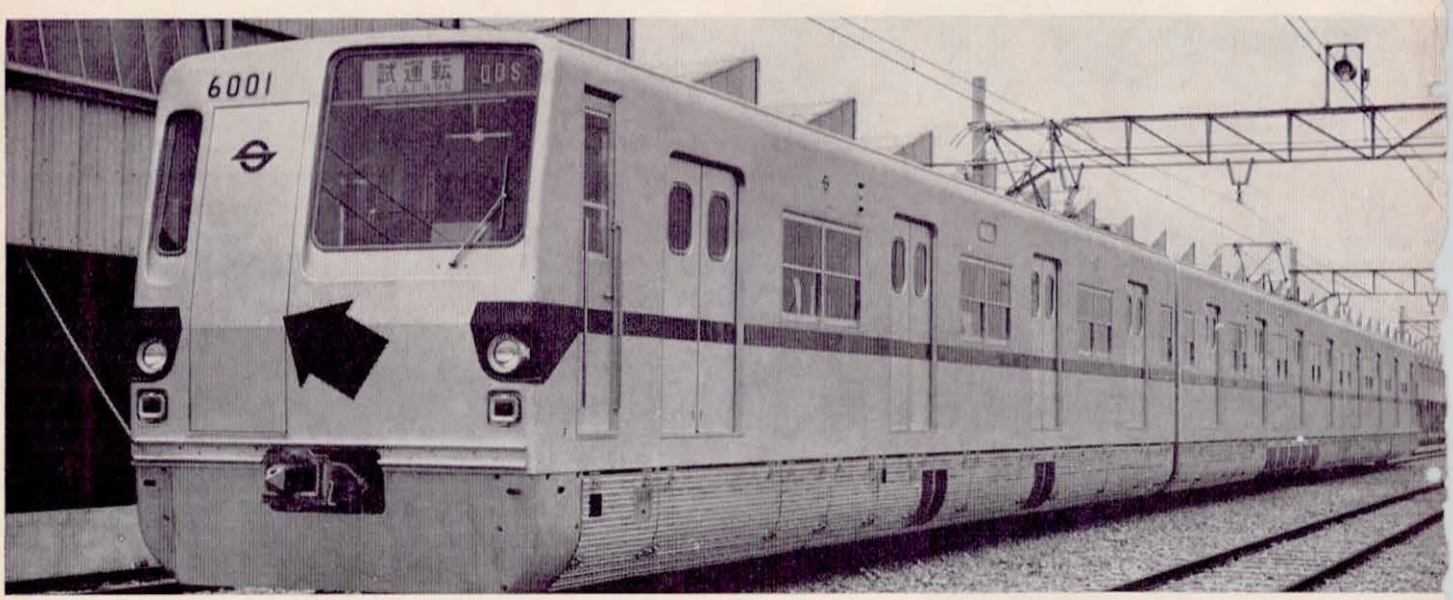
TIMKEN®
REGISTERED TRADEMARK
TAPERED ROLLER BEARINGS



TRANSIT

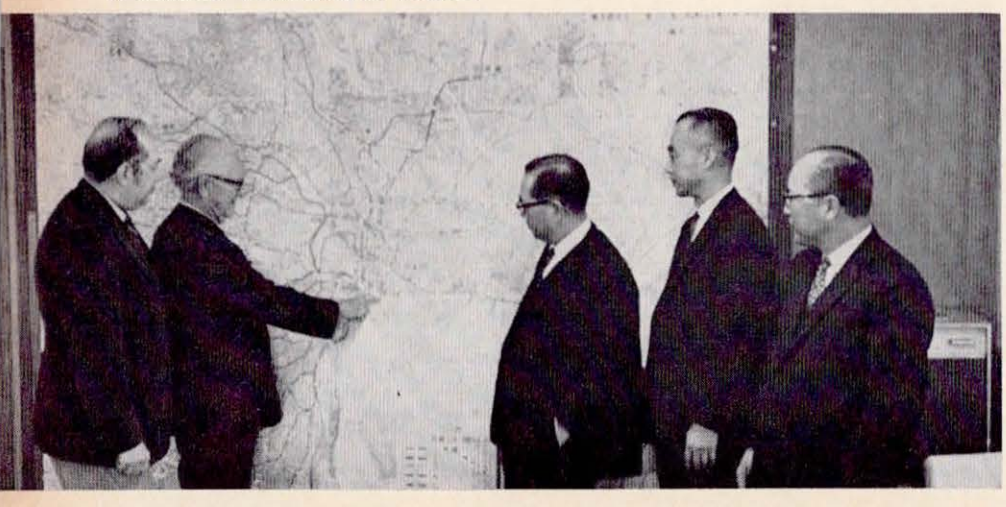
Japan sets a rapid pace

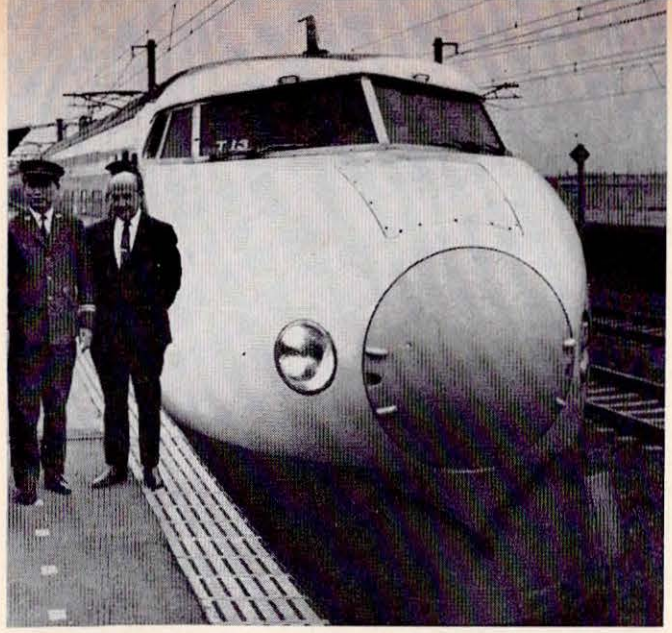
"Just a few years ago the rickshaw was our principal means of mass transport. We have had a lot of catching up to do," modestly observed a Tokyo transit officer at the conclusion of a mid-April seminar with a Railway Age transit-study group. "Catching up" turned out to be an Oriental understatement. Not only has Japan caught up with the mass-transport standards of the Occident; in many areas—comfort, cleanliness, technology—it has surpassed them. "I thought Washington would be the first city with an air-conditioned subway station," commented Maj. Gen. Jackson A. Graham, general manager of the Washington Metropolitan Area Transportation Authority. "I now find that Tokyo has that distinction." There were many other eye-openers.



TOMORROW'S TRANSIT TRAIN, TOKYO STYLE

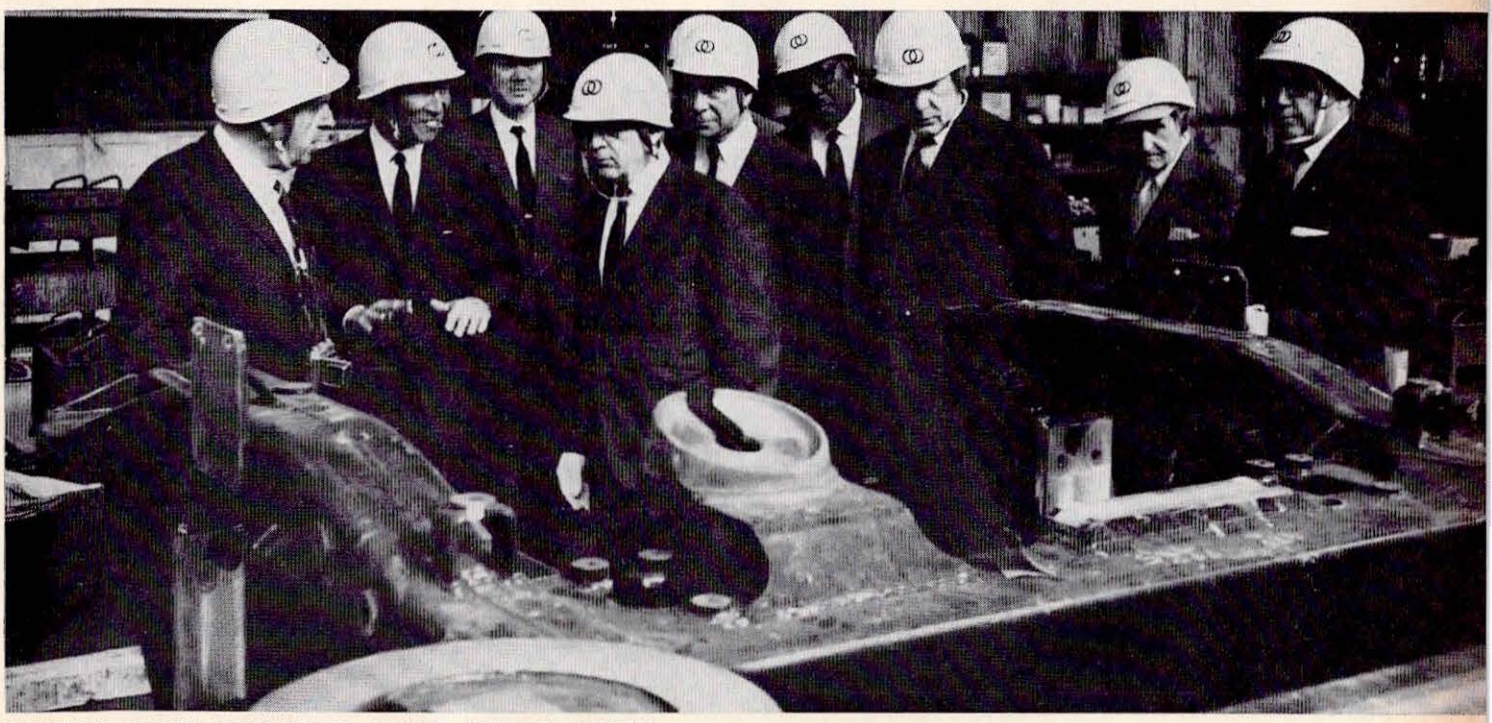
This radically new thyristor chopper-control train goes into service in 1971. Articulated, aluminum-alloy train has unusual head-end emergency door (arrow), and "see-through" interior design ("This could be one answer to crime in the subways," commented one member of Railway Age group). Seats recline during non-rush hours. All future trains of Teito Rapid Transit Authority will be of this type. Of 124 cars now on order, 72 will be powered, with 36 choppers controlling a pair; 52 will be trailers. Hitachi and Mitsubishi are furnishing the chopper controls. Extra initial cost: $10,500 per car; annual power/maintenance savings are estimated at $1,400 per car. (BART will be first U.S. system with chopper cars.) Below, WMATA's Lee Rhoads and Walter McCarter discuss expansion plans with Teito Managing Directors Y. Ishihara, Y. Hiramini, R. Yukawa.





INTERCITY RAPID TRANSIT

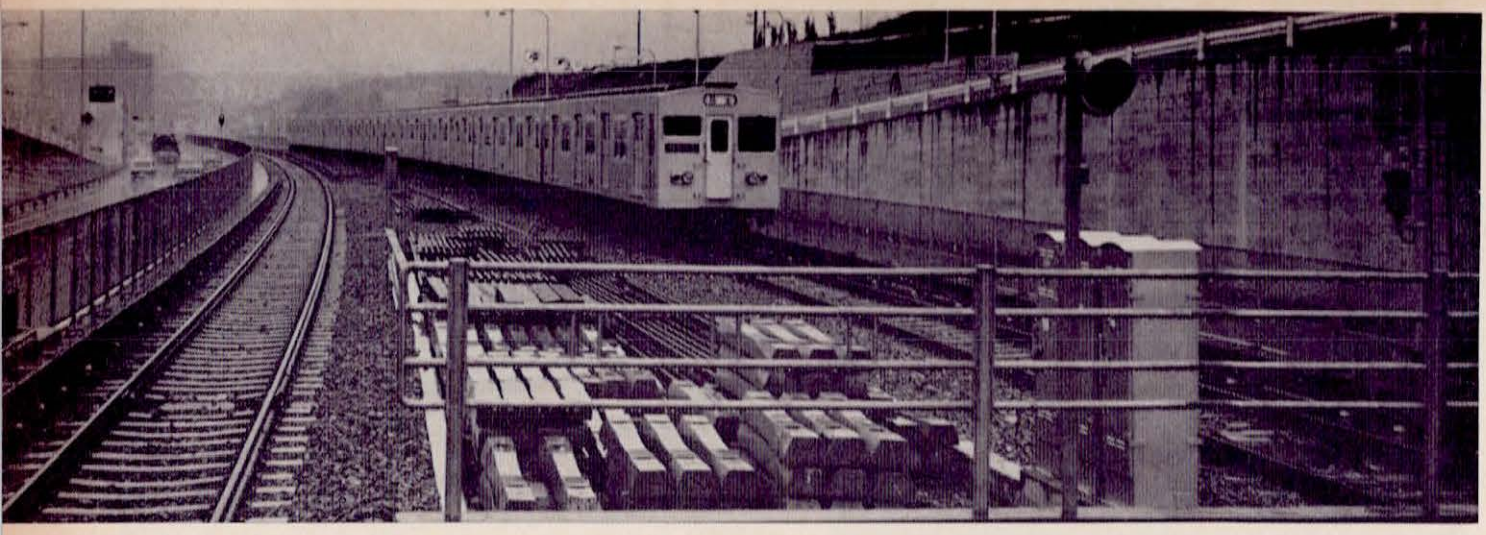
A national hero in Japan is New Tokaido Line-builder Hideo Shima, shown above with Lehigh Valley President John F. Nash and WMATA General Manager Graham. Hawker Siddeley Canada's product development director, M. Murzynski (top left), pronounced the "Bullet" train "a marvel." Mr. and Mrs. Nash (bottom left) found dining at 126 mph a smooth experience. J. E. Linden, president of De Leuw Cather International (second seat, below), was especially impressed with advanced construction techniques found on NTL and elsewhere in Japan.



WHERE NEW TOKAIDO CARS WERE BORN

At Tokyo shop of Kisha Seizo Kaisha (which built one-fifth of NTL cars) Managing Director Takao Takada (second from left) shows truck-assembly line to Keith Brown of Grand Trunk Western, R. G. Lewis and A. J. McGinnis of Railway Age, James Wilfong of Kansas City, Nash of LV, Murzynski of Hawker Siddeley, and Rhoads of WMATA.

Photos on this and preceding pages by Paul Mesila



MEDIAN STRIP LINE TO EXPO 70: "PROGRESS AND HARMONY"

Theme of Expo 70—"Progress and Harmony"—is exemplified by new line built to carry some of the millions visiting the exposition. Osaka Municipal Transportation Bureau revamped and extended its own No. 1 line (replacing 245 old cars with new "Silver" cars) and Expo completed line to the fair site, using median strip of super-highway. It was all accomplished, says the official report, with "tragic resolution and courage-breathing tremor." Osaka, like Tokyo, is far advanced in automatic train operation. Both Osaka and Tokyo share some of their transit lines with commuter railroad trains. In Japan, integrated mass transportation is a reality. In most of the rest of the world, it is still a dream.

MONORAIL: NO GO

Railway Age group reacted to Tokyo's city-to-airport monorail much as the Japanese have reacted: They rode it once as a novelty and were unimpressed. As Lee Rhoads put it: "Monorail may have its place—but not as a substitute for duo-rail trains." Line went bankrupt soon after opening.

HONG KONG GETS READY

Hong Kong's double-deck trams (left) are colorful, but this British crown colony of 4 million, with a population density as high as 1,500 per acre, is looking for something more efficient. Above, Transport Commissioner A. J. Shephard and consultant Leslie M. Frink of Freeman, Fox, Wilbur Smith & Associates, describe plans for a first-phase $250-million system which will be submitted in July. A 40-mile system is ultimately planned. One thorny criterion: The system must not only pay for itself—it must yield a 10% profit.

REPRESENTING U.S. at opening session of Tokyo conference were AAR President Thomas M. Goodfellow, to the speaker's immediate right, and Penn Central Vice Chairman Alfred E. Perlman, second from speaker's left.

SALVATION THROUGH CYBERNETICS?

By LUTHER S. MILLER, Editor

TOKYO

For four days, 300 delegates to the Third International Symposium on Railway Cybernetics—a who's who of the world's top railway managers—explored the uses and the misuses of cybernetics. After plodding through 50 papers that ranged from ponderous to pithy, after long hours of sharp give-and-take in simultaneously-translated Japanese, Russian, French and English, the blue-ribbon gathering agreed on one thing at least:

Cybernetics is too important to be left to the cyberneticians alone. If top management wants to get the most out of this exciting, elusive new science, then top management is going to have to learn what it is all about and take a firm hand in its direction.

Nearly every delegate had his own definition of cybernetics. B. de Fontgalland, chief of research for French National Railways, put it this way: "A cybernetic system can be roughly defined as a set of looped circuits incorporating basic data, results, checking and correcting functions, with the purpose of reaching a previously set objective. This covers the two basic concepts of cybernetics: information and feedback."

There was wide agreement that the feedback today is not all it should be.

● **Garbage in, garbage out.** "The machine must be harnessed to do the will of man," said AAR President Thomas M. Goodfellow. "The art of cybernetics must be perfected."

"This could be the most important tool for railroads since the diesel locomotive, if we only learn how to use it," said Lehigh Valley President John F. Nash. "But what we get out will only be as good as what we put in."

Penn Central Vice Chairman Alfred E. Perlman, a guiding light at the two previous conferences (in Paris and Montreal), and a sharply-focusing beacon at this one, summed it up in Perlmanesque language:

"When you put in garbage, you get back garbage. We're leaving too much to the programmers and the technicians. Every railroad president must become involved. Every manager must understand what it's all about. This is not a magical thing that is going to revolutionize railroading all by itself. But it can save our railroads in this time of inflation—if we only learn how to use it."

France's Louis Armand, secretary general of the International Railway Union (UIC), agreed: "We have drowned in a flood of information that we cannot use."

Russia's chief delegate affirmed that it was the same in the Soviet Union: "What is most important is that top management—not only the technicians —try to grasp cybernetic application."

● **The message gets across.** While repeatedly protesting the "mystification" which he said some technicians wanted to pump into the proceedings, Perlman regarded the third symposium as a resounding success. "I believe we are getting the message across," he said. "We wanted to get the very top people for this one and we succeeded."

The makeup of the U.S. delegation, which added up to 65, excluding wives, was impressive evidence of this. It included Santa Fe's John S. Reed, B&LE's Fred W. Okie, Rio Grande's Gus B. Aydelott, Lehigh Valley's John Nash, MoPac's Downing B. Jenks, Seaboard Coast Line's William T. Rice and Prime F. Osborne, Soo Line's Leonard H. Murray, Southern Pacific's Benjamin F. Biaggini, Trailer Train's Curtis D. Buford, former Western Maryland President Arthur Grotz, and John P. Hiltz of the National Railway Labor Conference.

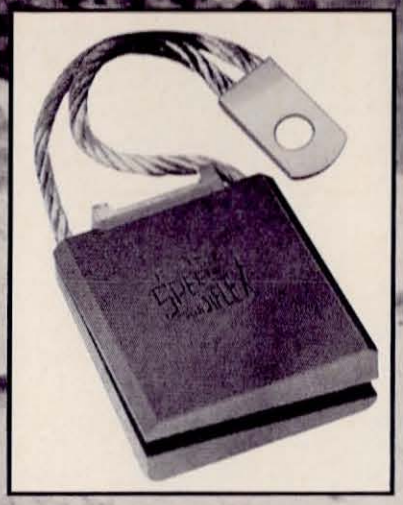
Among U.S. supplier delegates were Bryce W. Wyman of General Electric, Sydney W. Freeman of General Railway Signal, John W. Porter of GRS International, Robert C. Harmon of Harmon Electronics, Robert H. Johnson of Ingersoll-Rand, Palmer Bayer of Intermodal Transportation Systems, Franklin D. Barber of Standard Car Truck, J. W. Barriger, Jr., of Sylvania, John Stewart of Tamper, and J. E. Linden of De Leuw Cather International.

● **The positive side.** While much of the summing-up emphasis was on what's wrong with cybernetic application, substantial evidence was offered during the course of the symposium to suggest that there is much that is right. Considerably more than garbage is coming out of existing information systems, as many of the U.S. papers, in particular, demonstrated.

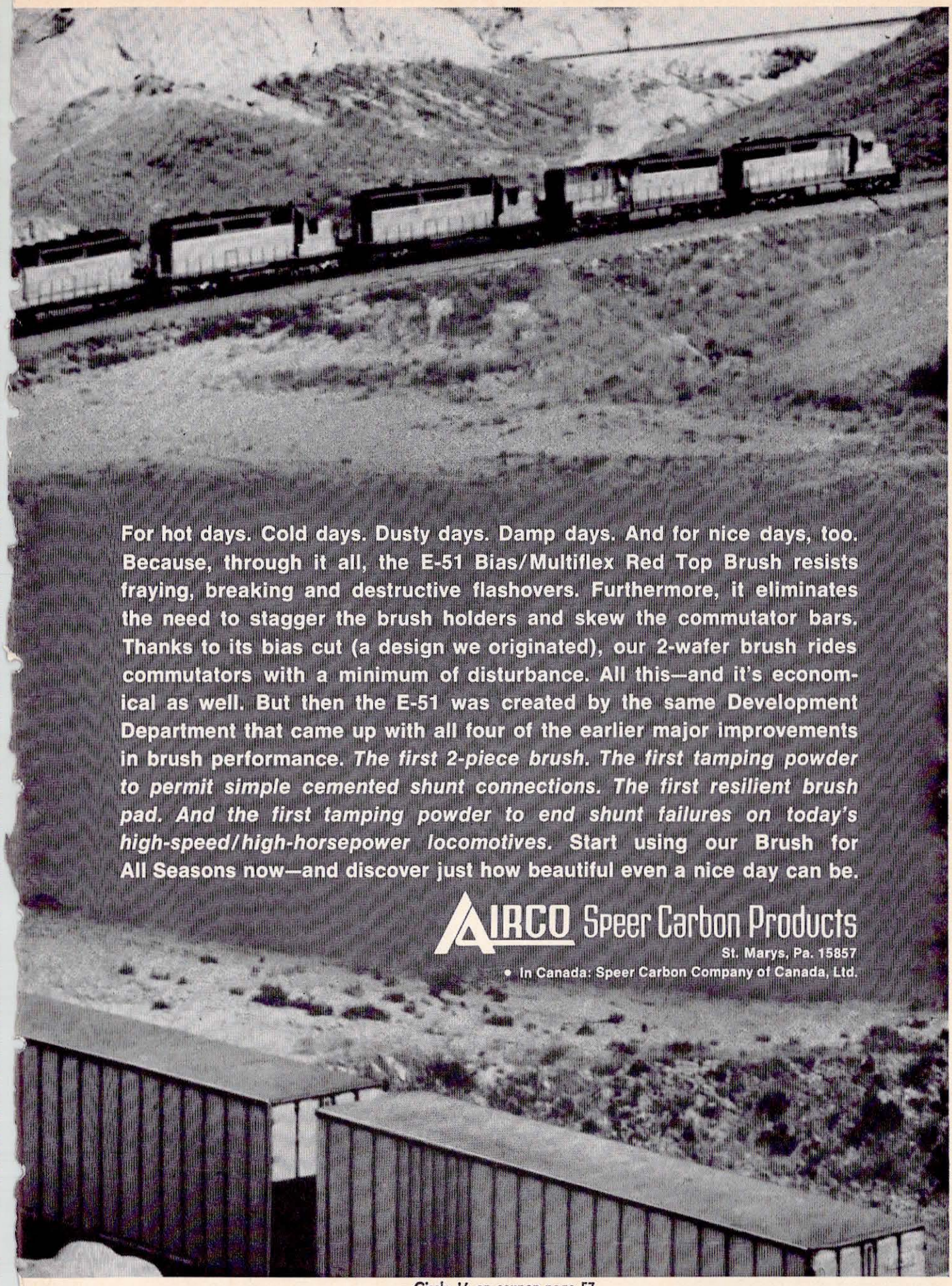
Burlington Northern's John L. Robson, for example, showed how cybernetics can be used as a day-to-day operating tool. Robson, who was vice president-operations of the former Great Northern, observed: "We use the computer to help us make some of our most basic and critical operating decisions. It is still a clerk, perhaps a super clerk, but it now sits closer to my office than in the past."

(Continued on page 64)

A BRUSH FOR ALL SEASONS



Photographed at Cajun Pass, Sullivan Curve on the Union Pacific Railroad.



For hot days. Cold days. Dusty days. Damp days. And for nice days, too. Because, through it all, the E-51 Bias/Multiflex Red Top Brush resists fraying, breaking and destructive flashovers. Furthermore, it eliminates the need to stagger the brush holders and skew the commutator bars. Thanks to its bias cut (a design we originated), our 2-wafer brush rides commutators with a minimum of disturbance. All this—and it's economical as well. But then the E-51 was created by the same Development Department that came up with all four of the earlier major improvements in brush performance. *The first 2-piece brush. The first tamping powder to permit simple cemented shunt connections. The first resilient brush pad. And the first tamping powder to end shunt failures on today's high-speed/high-horsepower locomotives.* Start using our Brush for All Seasons now—and discover just how beautiful even a nice day can be.

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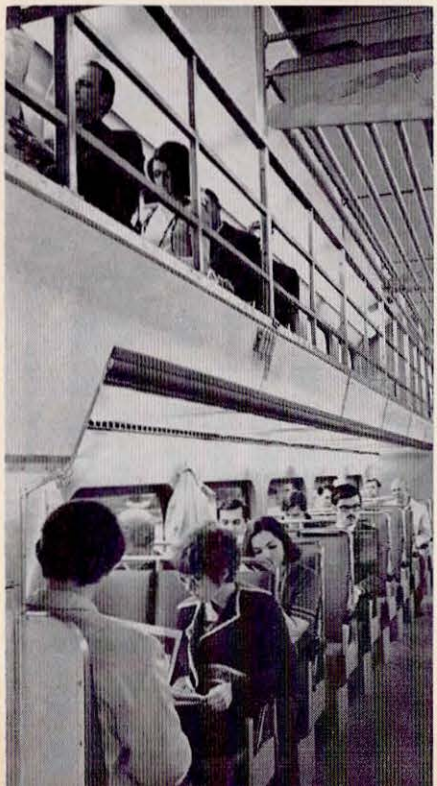
NEW TRAIN will replace remainder of CP's obsolete heavyweight coacnes.

TWO LEVELS mean high passenger capacity, new comfort for riders.



CP Rail brings bi-levels to Canada

Canadian Pacific is credited with originating the dome-car concept back near the turn of the century. As domes caught on two decades ago, CP signed up for Canada's first streamlined dome cars for its transcontinental "Canadian." Now it is also putting its commuters on two levels, another first for Canada.

• **New schedules.** Canada's pioneer double-deck commuter train entered service on CP Rail's Montreal suburban line at the end of April. Introduction of the nine-car, air-conditioned, push-pull train was also marked by changes in schedules and ticketing for the 40-mile Lakeshore route west from Montreal to Rigaud, Ont.

Already the Lakeshore line is served by 40 lightweight commuter cars and by a substantial number of CP's large fleet of Rail Diesel Cars. The single new bi-level train will replace the last of the obsolete heavyweight coaches used in commuter service.

S. M. Gossage, CP vice president, rates the bi-levels as being "designed specifically for high-density commuter traffic such as on the Lakeshore line. They combine greatly increased carrying capacity with maximum utility and comfort."

• **Invested $2.8 million.** CP's suburban service handles about 8,000 riders daily. In an interesting development a few years ago while CP was restructuring its long-haul service, the road indicated that hauling Montreal commuters was less of a financial burden than any other passenger operation. The new push-pull train represents an investment of $2.8 million, without any government contribution.

Canadian Vickers, which previously has built only the rubber-tired cars for Montreal Metro, constructed the seven coaches and two cab cars for CP. They are welded stainless steel, matching closely the arrangement of cars used by Southern Pacific and the Chicago-area commuter lines. Each weighs 115,000 pounds and is powered by its own diesel-alternator set to provide electric heating, air conditioning and fluorescent lighting.

All the cars are 85 feet long. Cab cars seat 156 and trailers 168. Walls and ceilings are faced with laminated plastic. Windows are double glazed with inner panes of graduated tinted safety glass. The wide center vestibules are proving to be a boon to fast loading and unloading of the trains. This feature, combined with the push-pull operation that makes it unnecessary to switch the locomotive, enables CP rail to schedule turnarounds in as little as seven minutes.

• **Greater convenience.** A ticket-by-mail flash-type monthly card and ten-strip individual tickets to replace punch tickets have been introduced. CP is working to reduce the number of cash fares collected on trains. Rearrangement of trains and stops, according to Gossage, "will get our commuters home earlier in the evening and provide additional night and extra weekend service." ■

the Griffin is a big wheeler

Griffin has the capacity to turn out nearly 6000 car sets of axle assemblies each year. We offer this service to railroads and car builders who do not have this capability at their own facility.

Mounted wheels can be delivered direct to your production line as needed. This will eliminate expensive intermediate storage and double handling.

For more than 90 years Griffin has been giving railroad men the best in wheels. We expect to keep on rolling.

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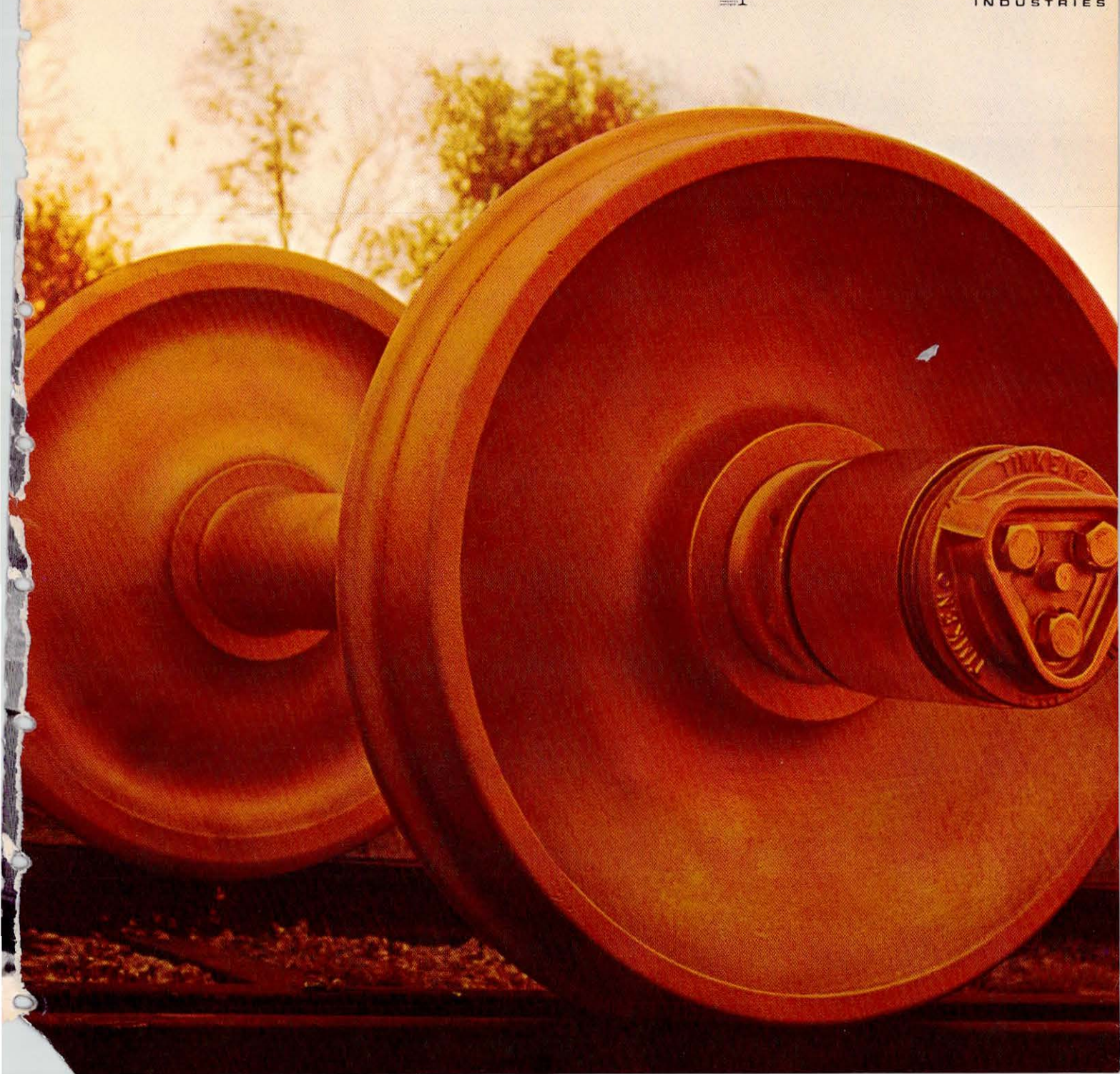

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Call Max to reserve a Chevy, Buick, Pontiac, Oldsmobile, Cadillac or other fine car. You'll get S&H Green Stamps, too. So next time, call Max. (He's available whenever you are.) Only Max can guarantee car reservations, and only National Car Rental has Max. Let Max do it.

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We make the customer No. 1.

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TRANSIT ROUNDUP

MILWAUKEE STARTS TRANSIT CAMPAIGN: Milwaukee Road is laying it on the line, with facts and figures and projections, in its effort to promote formation of mass transit districts by communities along its west and north Chicago-area suburban lines. Patronage is up by more than 50% since 1961 on the west line; projections indicate that patronage in 1980 may be about double what it is today. And even for the short range, Milwaukee needs equipment which, it believes, can only be financed through the mass transit district approach. By 1974, the road says, west-line growth alone will require addition of 36 bi-level coaches and 13 locomotives. Even at today's prices, Milwaukee notes, that would require an investment of more than $11.7 million. North-line requirements would add another few millions, for eight new coaches and two locomotives. First efforts toward formation of transit districts have been concentrated on the west-line communities.

CTA CRISIS: A SOLUTION IN SIGHT? Nobody has yet suggested holding a tag-day for the Chicago Transit Authority—but that's about the only fund-raising plan that hasn't been proposed.

Among the proposals which have received at least one-shot publicity:

—Direct subsidy to CTA.

—Levy of a tax on downtown off-street parking.

—Use of part of the city and county share of the state gasoline tax.

—Levy of a special gasoline tax in Cook County.

—Levy of a special "transportation tax" on real estate.

—Default on CTA bonds, thus challenging the bond trustee to sue for payment.

—Use of part of the state income tax revenue.

—Use of part of the state sales tax revenue.

—Use of cash in various "earmarked" funds.

—Use of monies previously budgeted in connection with a highway-building bond program which the Illinois Supreme Court ruled unconstitutional (RA, April 17, p. 14).

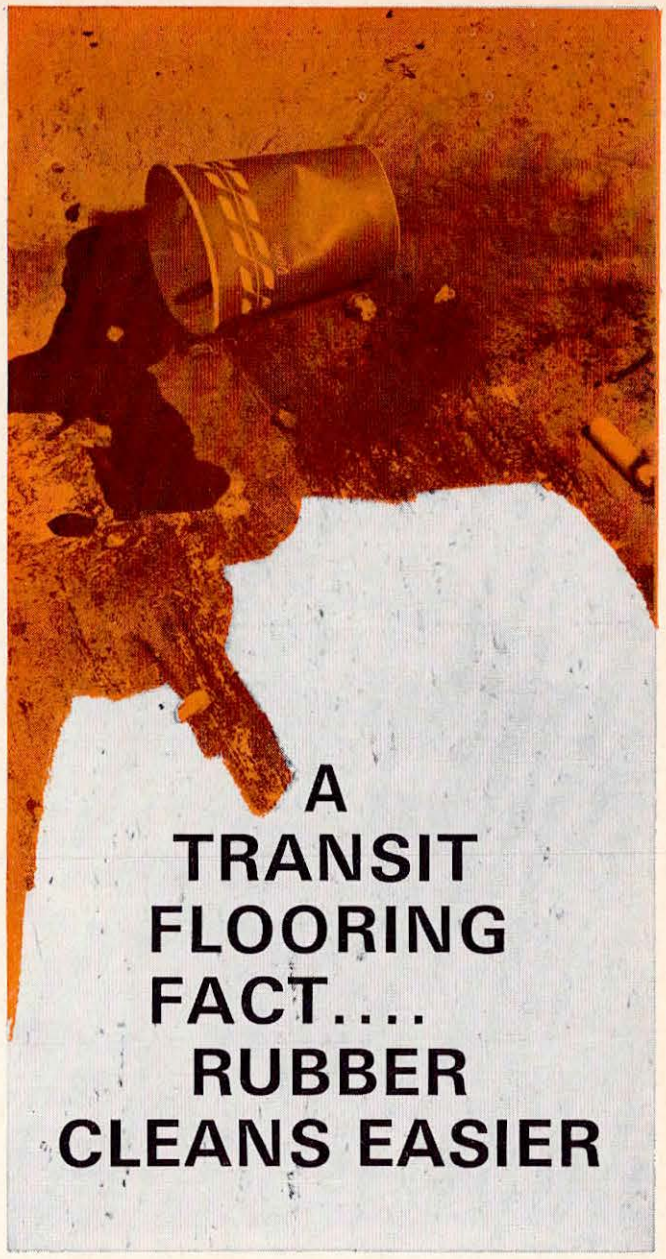
Republicans controlling the state are insisting that Chicago and/or Cook County come up with aid for CTA. Democrats running the city and county are insisting that the state share the load. Added to the party-politics aspect of the situation is the traditional rivalry between Chicago and the rest of the state.

For its part, CTA has been working with all factions. CTA has also urged its patrons to make their views known—and at one point several weeks ago the Authority was even running full-page ads in Chicago newspapers, urging riders to clip and mail-in a "yell and scream" coupon.

There are differences of opinion as to how much money CTA actually needs. By one estimate, the system faces a deficit of about $15 million over an 18-month period ending in mid-1971. But, other estimators argue, that total covers only operating/maintenance expenses and does not take into account debt service and depreciation. With these elements added in, the figure jumps to something closer to $50 million.

In all the fuming and fussing, one thing does seem clear: Unless some form of aid is agreed upon, and soon, CTA fares are going up—probably by a dime, to 50 cents.

—Gus Welty



Whether it's slush, snow, dirt, cigarette scorch, gum or grease . . . it will clean off rubber Transit-Flor quickly, without staining, singeing or marring.

Durability, safety and eye appeal have been blended into Transit-Flor, providing your rail cars with a long-wearing, maximum-quality flooring that will outperform any other.

Result: Years and years of unexcelled wear.

THE R.C.A. RUBBER COMPANY

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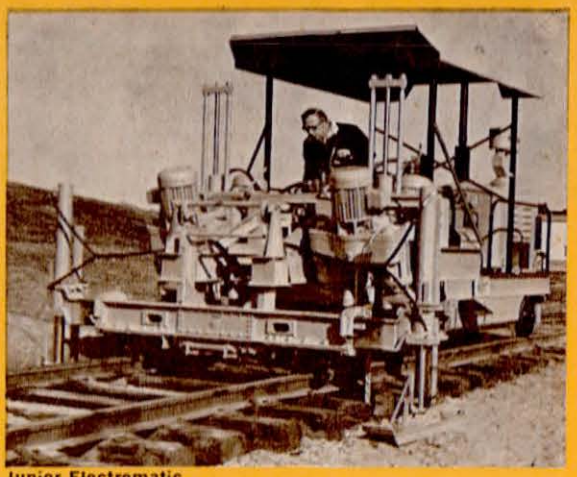
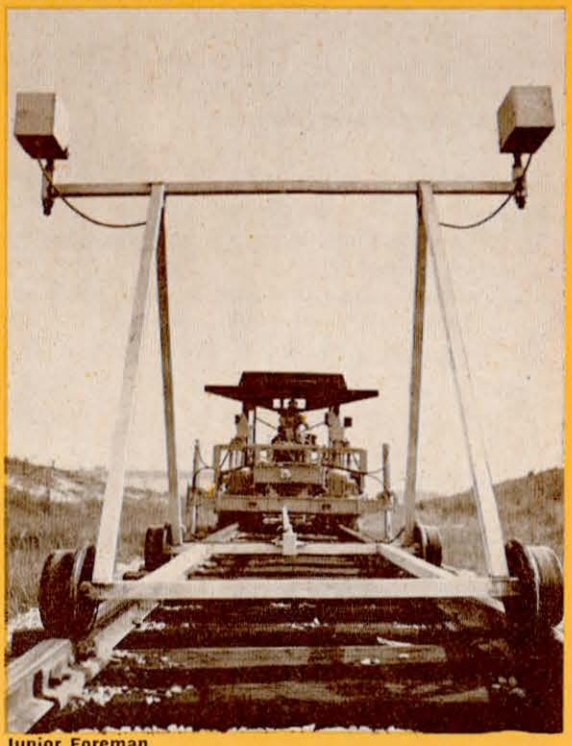


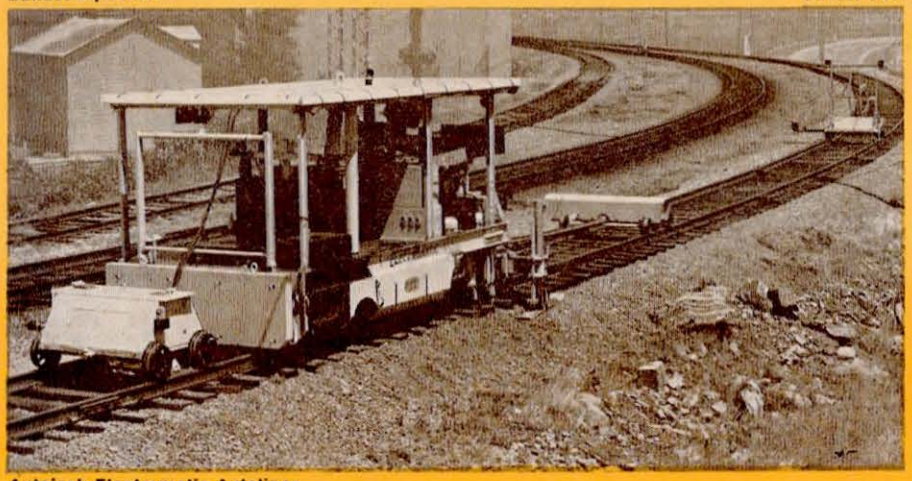
Junior Electromatic

Heavy-Duty Brush Cutter

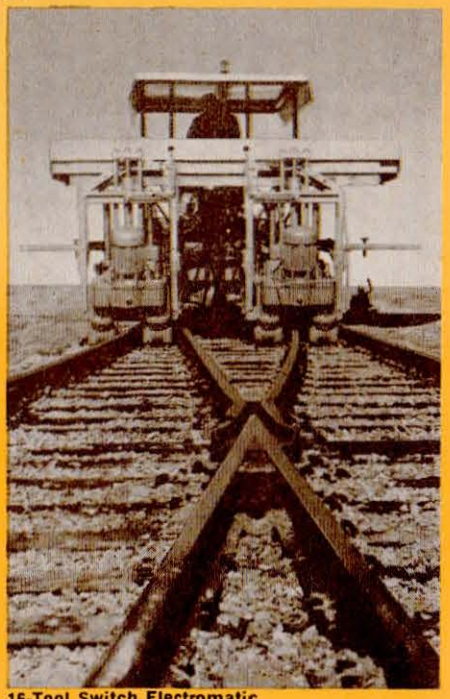


Junior Foreman

Ballast Equalizer



Autojack Electromatic Autoliner



16-Tool Switch Electromatic

The world's most advanced track maintenance equipment.

From Tamper.

Tamper designs and manufactures a complete line of railway track maintenance equipment. It's all backed by specialized after-sales service. And it's all designed for automatic, simple operation. For instance:

Autojack Electromatic Autoliner

It requires only one man to lift, level, line and tamp 1350 feet of track an hour under normal working conditions. This powerful, high speed, heavy-duty, completely automatic precision tamper maintains most of North America's main-line track. Precise control or lift on both rails using infrared beams for leveling (Delta System). Automatic cross leveling within 1/16". Lining takes place simultaneously and automatically with leveling and tamping. Automatic, continuous operation for tangent, transition and curve track. Needs no plotting of transitions or curves, because machine computes as it runs for best transition. Automatic cycle assures uniform results. Simple and inexpensive maintenance. Skin lifts to 6-inch lifts made with equal efficiency.

16-Tool Switch Electromatic

It tamps the complete switch, turnout, crossover or ladder track with production tamper speed and pattern, with only one operator. Workheads designed to move laterally, independently or simultaneously. Doubles as a production tamper—for smoothing and spotting—and as the second machine in a tandem operation. Can be equipped with optional jacks, cross level indicator, remote control, Junior Foreman and swivel deck frame.

Junior Foreman

The most recent attachment to the Junior or Switch Electromatic Tampers incorporates an infrared light beam referencing system for surfacing and lining. With the Junior Foreman, these machines become one-man operations for surfacing out of face, for smoothing and spotting and joint peaking. Inexpensive and economical operation, simple machine maintenance, highest accuracy.

Junior Electromatic

The Junior is a heavy-duty, 16-tool, compact, precision utility tamper with power to do the job. Handles the toughest jobs of spot surfacing and between cycle maintenance. Designed for work behind tie gangs, on branch lines, out-of-face work on secondary lines and as an economical second machine in a tandem tamping program. Can be equipped with optional jacks, cross level indicator, sighting, remote control and Junior Foreman.

Heavy-Duty Brush Cutter

The Kal-Trac features on-off track design with hydraulically operated On-Rail wheels. Heavy-duty cutter clears right-of-way growth up to 12" diameter trees. Cutters operate simultaneously or one side at a time, each making a 7-foot wide cut in either direction. Clears a swath 50 feet wide (25 feet from center line of track). Tamper Brush Cutters are available in various configurations and are suitable for mounting on many types of equipment.

Ballast Equalizer

The Model BE-17 features split plow and track sweeper. The large capacity side dressing attachment dresses shoulder material in either direction and incorporates tie end plow, rooter and scarifying teeth. Front directional plow can plow material out of or into the track area or transfer from one side of the track to the other. GM Diesel powered, four-wheel enclosed drive, power shift torqmatic transmission with inching control in all ranges. Rotary snow auger available.

There's much more of the Tamper line. And our equipment is now available for surfacing and lining contracts. Complete information is available on request.

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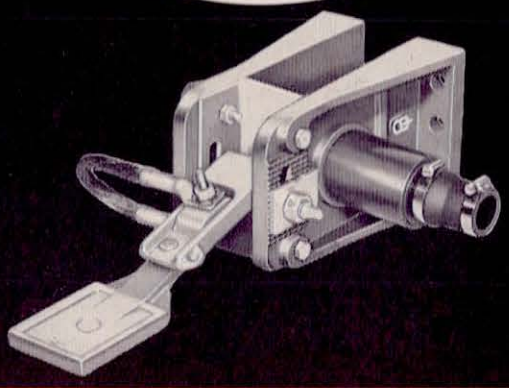
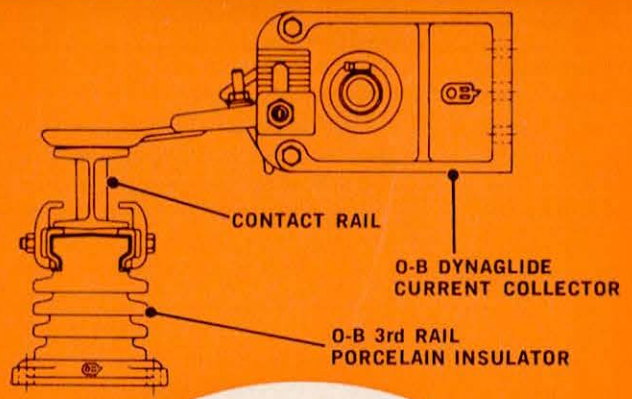
MEMBER RPI

Circle 19 on coupon page 57

O-B's new

DYNAGLIDE® CURRENT COLLECTOR





outperforms the old style heavyweights

Torsional spring loading to maintain uniform rail contact pressure. Adjustable for ready accommodation to variations in rail height. Exceptional performance at speeds to 100 MPH.

Weighs less than 40 lbs. – just a fifth that of conventional heavyweights. Saves up to 600 deadweight pounds per car – a significant operational savings per year.

Rugged Plaskon support bracket is its own insulator. Direct connection from shoe through fuse box to motors.

Simplified design. Only five basic components. Only one moving part. Fast servicing, easy maintenance.

The perfect choice for specification on new vehicles or replacement on old. Your O-B District Manager will show you how this new, advanced current collector will fit your specifications – step up transit performance.

668-T

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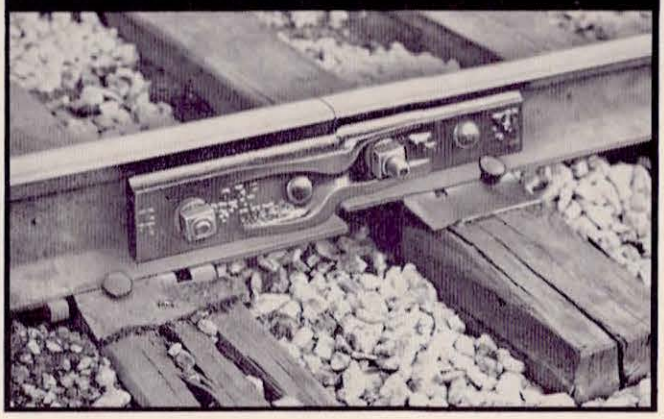
OB OHIO BRASS

Circle 22 on coupon page 57

Q AND C STEP JOINTS

proven in service and preferred!



Through the years Q and C Compromise Joints have set a notable in-service record for accuracy and dependability.

They are designed with particular reinforcement where it counts most – at the vital center, on both the front and back of the bar – to assure maximum rail-end durability.

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Circle 29 on coupon page 57

People in the News

Gregory W. Maxwell
EL—D&H

John P. Fishwick
N&W

Herman H. Pevler
N&W

Robt. B. Claytor
N&W

John M. McGuigan
PC

C. W. Pleiss
Reading

BANGOR & AROOSTOOK.—Richard W. Sprague, director public relations, Houlton, Me., elected vice president–public relations.

BURLINGTON NORTHERN. — R. R. Pederson named assistant to the vice president, operations; **L. J. King,** general manager, terminals and TOFC/COFC; **C. W. Thompson,** general superintendent, transportation; **B. G. Anderson,** chief engineer system; **R. G. Brohaugh,** chief engineer, maintenance; **D. V. Hom,** chief mechanical officer, cars; **D. V. Sartore,** chief engineer, design; **R. G. Tausch,** chief mechanical officer, locomotives, all with headquarters in St. Paul. **L. R. Seaholm** appointed Twin Cities regional superintendent, locomotives, and **L. R. Earl,** Twin Cities regional superintendent, cars, both at Minneapolis. Directors, operations department, headquarters St. Paul: **R. L. Aase,** terminal performance control; **S. H. Barlow,** maintenance planning; **W. R. Bjorklund,** operations administrations; **J. J. Boettner,** freight equipment; **L. C. Bolger,** information services; **J. F. Dean,** security and freight claim prevention; **J. A. R. Draper,** terminal operations; **N. E. Ekrem,** bridge engineering; **A. L. Essman,** signal engineering; **H. E. Gagnier,** transportation analysis; **R. L. Grinde,** power and train operations; **R. W. Humphreys,** contract administration; **C. Hungerford, Jr.,** industrial engineering; **R. E. Johnson,** mechanical engineering; **W. B. Jones,** passenger train operations; **F. A. Kempe,** track engineering; **J. W. Kirby,** dining and sleeping cars, system; **N. V. Kolpin,** transportation schedules; **H. M. Lary,** mechanical planning; **R. C. Lindquist,** safety and rules, system; **C. F. Olson,** valuation engineering; **R. W. Spannring,** mechanical services; **J. P. Titus,** building engineering; **W. W. Walter** locomotive equipment planning; **T. C. Whitacre,** operations planning; **T. W. Wigton,** communications, system; **M. O. Woxland,** construction projects; **K. E. Wyckoff,** public works planning; **A. J. McGuinn,** TOFC/COFC. **J. A. Bichsel** becomes executive assistant, St. Paul; **H. E. Pierce,** assistant general superintendent, transportation, and **V. M. Johnson,** manager, budget planning. **E. J. Faust** named manager, transportation, Twin Cities region, Minneapolis.

Mechanical locomotives-system appointments: **J. D. Schroeder,** assistant chief mechanical officer, locomotives; **A. J. Schuck** and **C. P. Stendahl,** general superintendents motive power, mechanical; **H. A. Whyte,** general superintendent, work equipment and machinery; **J. J. Kelly,** assistant to chief mechanical officer, locomotives; **W. M. Reed,** superintendent of engines; **H. L. Vedrine,** superintendent motive power; **D. F. Marston,** manager, mechanical, Twin Cities region; **R. J. Morris,** superintendent, electrical equipment; **F. J. Moore,** superintendent, wheels and axles; **J. L. Ilkenhons,** superintendent, work equipment; **J. H. Mankopf, Jr.,** superintendent, tools and machinery. With the exception of Mr. Marston, all will have headquarters in St. Paul. Mr. Marston's headquarters are in Minneapolis.

Mechanical cars-system appointments, headquarters St. Paul: **A. J. Havlick,** assistant chief mechanical officer, cars; **J. M. Hick,** general superintendent, new car equipment; **R. J. Fritz,** general superintendent, car maintenance; **A. A. Richter, T. F. Hoffman, D. S. Roy** and **G. B. Tiemann,** superintendents car department.

Mechanical services-system appointments headquarters St. Paul; **J. I. Hillard,** assistant director mechanical services; **D. E. Whitney,** general supervisor air brake systems; **L. O. Hanson,** engineer of tests, Como Shop; **H. W. Wales,** manager personnel training; **P. Benjamin,** superintendent of welding and reclamation; **J. R. Cannon,** superintendent of air brake systems, operations; **D. W. Dingle** and **R. G. Erickson,** superintendents air brake systems, maintenance; **W. R. Petry,** assistant engineer of tests.

Mechanical planning-system appointments, headquarters St. Paul: **T. R. Hackney,** assistant director, mechanical planning; **L. A. Rose** and **K. Axelson,** managers production standards, cars; **O. J. Martin,** manager facilities planning, cars; **R. J. Seeley,** manager facilities planning, motive power.

Mechanical engineering-system appointments, headquarters St. Paul: **C. G. Breeding,** assistant director mechanical engineering; **H. E. Bowie,** manager mechanical engineering; **J. L. Lind,** manager mechanical engineering, car modification; **W. A. Schmidt,** manager mechanical engineering, locomotive and passenger cars; **C. C. Bennett** and **H. C. Kuberski,** assistant managers mechanical engineering.

Master mechanics Twin Cities region: **H. H. Goodrow,** Lake division Superior, Wis., **D. S. Kukull,** Minneapolis; **A. Q. Ford,** Fargo, N.D.; **R. E. Jaeb,** Grand Forks, N.D.; **E. D. Shabert,** Minot, N.D.

Engineering appointments, Twin Cities region, headquarters Minneapolis: **C. D. Archibald,** manager, engineering; **V. F. Demarais,** regional engineer; **L. W. Anderson,** maintenance engineer; **R. Lehrke,** regional signal engineer. Division engineers are **G. J. Pechmann,** Minneapolis; **J. I. Staples,** Lake division, Superior, Wis.; **A. L. Twedt,** Grand Forks, N.D.; **J. L. Vickers,** Fargo division, Fargo, N.D.; **J. P. Turner,** Minot division, Minot, N.D.

CANADIAN PACIFIC.—J. A. Forbes appointed transportation assistant, succeeding **M. C. Norris,** resigned. **L. S. Vaines** named assistant to chief of transportation, succeeding Mr. Forbes. **R. I. Greenfield** appointed superintendent, material handling and damage prevention, succeeding Mr. Vaines. **T. M. Craig** named assistant superintendent, material handling and damage prevention, succeeding Mr. Greenfield. **R. J. Pitcairn** appointed chief supervisor, damage prevention (perishable traffic and weighing), succeeding Mr. Craig.

CHESAPEAKE & OHIO.—Gilbert T. Barker appointed district sales manager, New York.

CHESAPEAKE & OHIO—BALTIMORE & OHIO.—John J. Dwyer, chemical engineer, appointed engineer-environmental control, Huntington, W.Va. He will work with federal, state and local agencies in matters concerned with water, air and land pollution, industrial hygiene and sanitation.

ERIE LACKAWANNA — DELAWARE & HUDSON.—Gregory W. Maxwell, president, EL, named president and chief executive officer, EL and D&H, Cleveland, Ohio. He succeeds **John P. Fishwick,** former chairman and chief executive officer, EL, and president, D&H, who has been elected president, **Norfolk & Western.** Mr. Fishwick will remain a director of both companies, as well as president and director of Dereco, Inc., holding company which controls both EL and D&H.

John R. Turbyfill, general solicitor, N&W, named senior vice president of both

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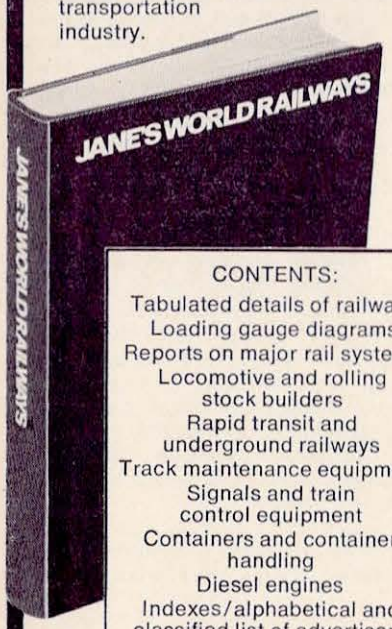

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EL and D&W and a vice president of Dereco.

J. R. Neikirk, general manager, Western Region, N&W, appointed vice president—operations, EL and D&H. On the EL, he succeeds **Fred Diegtel,** who becomes vice president, EL.

FLORIDA EAST COAST.—B. G. Hudson has joined the FEC as engineering assistant to vice president, St. Augustine, Fla. Mr. Hudson has had ten years engineering experience with the Norfolk & Western and Akron, Canton & Youngstown.

GRAND TRUNK WESTERN.—John C. Grantz, district sales manager, Kansas City, Mo., appointed assistant freight sales manager, Chicago. **John L. Hopper,** supervisor, passenger sales, appointed district passenger representative, Chicago. **J. Aubrey Baker,** supervisor, passenger services, named operations officer, customer and catering services, Chicago.

Gerald B. Rupel, car shops superintendent, Port Huron, Mich., named mechanical officer-car, Battle Creek, Mich. Mr. Rupel's successor is **G. W. Page,** motive power work study analyst, Battle Creek.

ILLINOIS TERMINAL.—E. L. McKenzie named general traffic manager, St. Louis.

JERSEY CENTRAL.—Theodore J. Morgans, Jr., appointed assistant coal traffic manager and **Frank T. Reilly,** district sales manager, both at Newark, N.J.

KANSAS CITY SOUTHERN.—W. H. Bruening appointed chief mechanical officer, Pittsburg, Kans. **T. T. Souter** named assistant general manager, mechanical-purchases, Kansas City, Mo. **H. E. Wittenberg** becomes assistant purchasing agent, Kansas City. **W. B. Johnson,** superintendent of machinery, Pittsburg, retired Mar. 31 after more than 44 years' service.

MILWAUKEE.—Gail F. Meintzer, district manager of sales, Chicago, named assistant regional manager of sales, Seattle. Mr. Meintzer's successor is **John T. Conlin,** transferred from Seattle, who in turn is replaced by **Jack L. Werner,** assistant district manager of sales, Seattle. **Lawrence R. Whelchel,** sales representative, Atlanta, Ga., becames district manager of sales, Everett, Wash. **Earl C. Winther,** sales representative, Salt Lake City, **Richard D. Wood,** sales representative, Sioux City, Iowa, and **William E. Van Maren,** sales representative, Houston, named assistant district managers of sales, Spokane, Tacoma, Wash., and Kansas City, Mo., respectively.

Matthew H. Lear named public relations representative, Chicago.

F. B. Cederholm named assistant superintendent, Milwaukee division, Milwaukee, Wis. Mr. Cederholm's successor as assistant superintendent, Milwaukee division, Green Bay, Wis., is **A. G. Beauvais,** trainmaster, Twin City Terminal-Duluth division, St. Paul.

(Continued on page 53)

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MISSOURI - KANSAS - TEXAS.—**Ray A. Leahy** appointed assistant general rate manager; **Bernard G. Stolte,** assistant general rate manager; **Don S. Beynon,** rate manager; **Thomas F. Steiniger** and **Joseph D. Tripodi,** assistant rate managers; **John A. Beekman,** assistant manager of divisions, all with headquarters in St. Louis.

MISSOURI PACIFIC.—**R. E. Gray,** trainmaster, Omaha, transferred to Van Buren, Ark., to succeed **E. J. Drimmel,** who retired recently after more than 46 years' service. Mr. Gray's successor is **C. H. Bell, Jr.,** trainmaster, Coffeyville, Kans., who in turn is replaced by **R. L. McCoy,** transferred from Osawatomie, Kans. **C. C. Reeves,** assistant trainmaster, Lake Charles, La., replaces Mr. McCoy. **R. F. Hickerson,** trainmaster, **Texas & Pacific,** Ft. Worth, Tex., named trainmaster, **MP,** Kansas City, Mo., to succeed **J. R. Scherer,** resigned. **J. W. Marbach,** assistant trainmaster, **MP,** Pine Bluff, Ark., succeeds Mr. Hickerson. **L. V. Richards** named manager-special equipment and utilization, and **O. K. Angle,** assistant manager-special equipment and utilization, **MP-T&P,** both in St. Louis.

William G. Taylor appointed freight traffic manager-pricing and divisions; **Kenneth J. Groh, Eugene J. Elliott** and **Benjamin J. Maeser,** assistant freight traffic managers; **Norbert J. Fleischmann** and **Denis I. Doyen,** general freight agents; **John R. Colvin** and **Francis L. Leonard,** assistant general freight agents; **T. P. Murphy,** manager-special services, Freight Traffic Department-Pricing and Divisions, all with headquarters in St. Louis. In a realignment of the Traffic Research Division, **Francis M. Dowling,** freight traffic manager, traffic research, promoted to director of marketing research. **James S. Goode** advanced to manager, special studies, and **Mark L. Smith** to manager, traffic research. Mr. Goode was formerly assistant freight traffic manager, traffic research, and Mr. Smith was a traffic analyst. **Neal Spaeth,** data analyst, becomes supervisor, data services.

MISSOURI PACIFIC-TEXAS & PACIFIC-CHICAGO & EASTERN ILLINOIS.—**A. E. Anderson** named director-systems installations; **V. G. Dyer,** manager-systems installation, and **C. A. Boyd,** manager-systems data control, all with headquarters in St. Louis.

W. E. Sullivan appointed insurance officer, to succeed **W. C. Kaiser,** manager insurance, who retired May 1 after more than 45 years of service.

NORFOLK & WESTERN.—**John P. Fishwick,** senior vice president, named president and chief executive officer, Roanoke, Va. (RA, April 13, p. 15). He succeeds **Herman H. Pevler,** who is retiring, but will remain a director and chairman of the board. **Robert B. Claytor,** also a senior vice president, appointed executive vice president, a new position.

PENN CENTRAL.—**John M. McGuigan** appointed vice president and general manager of the new Northeastern Region, at

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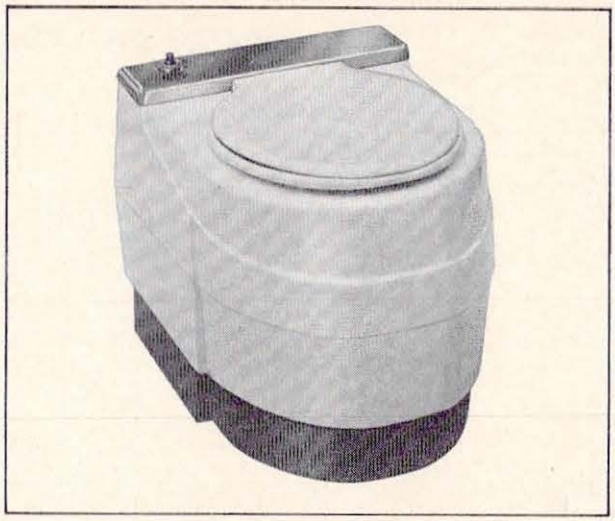

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**There must be a reason.*

Circle 18 on coupon page 57

New Haven, Conn. He was formerly general manager, New Haven Region, which has been combined with the Northeastern Region.

H. C. Kohout, vice president–passenger services, Philadelphia, appointed vice president–passenger operation.

Ferdinand L. Kattau appointed vice president–personnel, Philadelphia. He was vice president–management planning and development and retains responsibility for those activities. **John J. Maher,** vice president–labor relations and personnel, continues as vice president–labor relations.

Joseph S. Fadale, manager–locomotive maintenance quality control, Philadelphia, named general manager, Altoona Shops, succeeding **John C. White,** appointed to the new position of general mechanical superintendent–system shops, Philadelphia. **Charles L. Reese,** manager–systems and budget, mechanical department, promoted to director–equipment planning and control, Philadelphia.

John B. Hitchcock, superintendent, Hudson Division, New York, named superintendent, Michigan Division, Jackson, Mich., succeeding **Richard P. McFeaters,** named superintendent, Buffalo, N. Y., Division.

READING.—E. C. Cassel, assistant vice president-finance, Philadelphia, retired April 1, after more than 45 years of service. **C. W. Pleiss,** deputy general auditor, appointed general auditor, succeeding **A. T. Wilkinson,** retired after more than 44 years of service. **Thomas J. Giblin,** auditor of disbursements, named assistant general auditor.

Robert F. Hartman, supervisor, freight loss and damage prevention, named superintendent of that department.

ROCK ISLAND.—John D. Ditto appointed superintendent operating services, and **Gene E. Dilleshaw,** assistant manager of transportation. Mr. Ditto, formerly assistant manager, operating services, and Mr. Dilleshaw, formerly transportation supervisor, will continue to make their headquarters in Kansas City, Kans.

Ray M. Snelson, assistant regional manager-freight sales, Des Moines, Iowa, appointed marketing manager, grain and grain products, Kansas City, Mo., to succeed **J. Ted Wells,** advanced to manager of market development, Chicago. **William F. Hartigan,** district manager-freight sales, Des Moines, succeeds Mr. Snelson.

Charles V. Adams, system material coordinator, named administrative assistant in the purchasing and stores department, Chicago. **John J. Fortunato,** manpower control assistant in the personnel department, appointed personnel officer.

David E. Visney appointed superintendent, Missouri-Kansas division, Kansas City, Kans. **J. Earl Hare,** senior assistant superintendent, Southern division, El Reno, Okla., named acting superintendent, Southern division, replacing Mr. Visney. Mr. Hare's successor is **Charles F. Haley,** assistant superintendent, Little Rock. **Richard L. Larson,** freight sales representative, St. Paul, named district manager-freight sales, St. Joseph, Mo.

Clarence T. Tyree, general superintendent-car, mechanical department, Kansas City, Kans., retired April 30.

SUPPLY TRADE

E. E. Stookey, vice president and general manager, **Buckeye Steel Castings Division** of **Buckeye International, Inc.,** Columbus, Ohio, has been named president and general manager.

Allen Hubbard III has been appointed marketing manager, **Kerite Co.,** Seymour, Conn. He was formerly sales manager, Wire Products Division, Lewis Engineering Co., Naugatuck, Conn.

Robert F. Herrold has been promoted to eastern sales manager, Transportation Division, **Adams & Westlake Co.,** subsidiary of Allied Products Corp., at Newark, N.J. **Harry J. Knight** has been promoted to assistant eastern sales manager.

W. F. Hylton, sales engineer, **Westinghouse Air Brake Division** of **WABCO,** has been appointed representative, Southwestern District, Atlanta, Ga.

M.R. Graham, market research analyst, **Timken Roller Bearing Co.,** Canton, Ohio, has been promoted to supervisor—market research.

Richard M. Boyd has been elected president, **North American Car Corp.,** effective on or about June 1. Mr. Boyd, formerly vice president, traffic and transportation, **Pittsburgh Plate Glass Co.,** succeeds **Gen. E. C. R. Lasher,** who will become chairman of the board and chief executive officer.

Donald J. Price, manager of business and product planning, **Westinghouse Air Brake Division, WABCO,** Wilmerding, Pa., has been named vice president and general manager, **Westinghouse Air Brake Division** of **WABCO Ltd.,** Hamilton, Ont., Can.

Thomas J. Kolesa, sales engineer, **General Steel Industries,** has been appointed administrative assistant to the president, Castings Division, Granite City, Ill.

T. A. Ammer has been elected a vice president, **Chicago Pneumatic Tool Co.,** New York. Mr. Ammer, who has been district manager, Los Angeles sales office, also has been named general sales manager, succeeding **R. B. Miller,** who retired April 1, after 39 years with the company.

Lawrence N. Shelley, assistant vice president, **Camel Sales Co.,** has been named vice president, Cleveland, Ohio.

Railroad Repair & Supply Co. has purchased **Hansl Manufacturing Co.,** a manufacturer of railway switch and signal padlocks. **Ted Meisner** has been named president of Hansl, which will operate as a wholly-owned subsidiary of Railroad Repair. **Edwin D. Fortune** has been named sales representative, Railroad Repair. He was formerly general car inspector, **Santa Fe.**

John M. Lillis, controller, **REALCO Services, Inc.,** has been appointed vice president, administrative services.

(Continued on page 58)

E. E. Stookey
Buckeye

Allen Hubbard III
Kerite

Robert F. Herrold
Adams & Westlake

Harry J. Knight
Adams & Westlake

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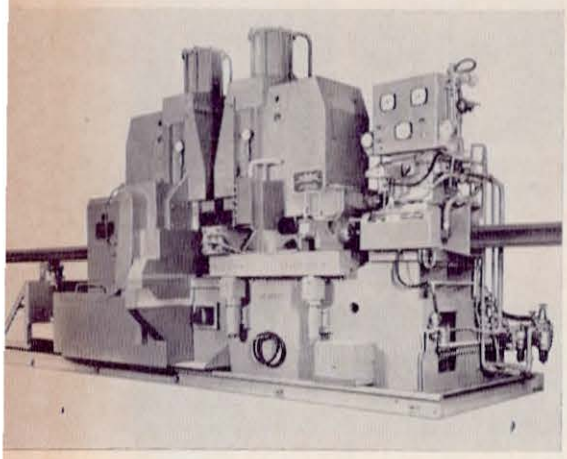
Circle 23 on coupon page 57

New Products Report

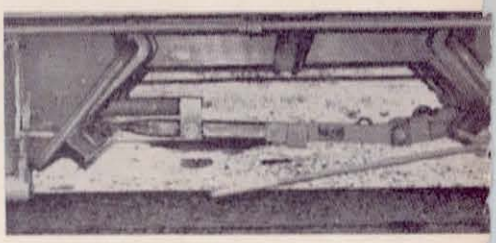


Rail-welding machine (RA-1)

A new device has been incorporated in the A.I. Flash Butt Welder which is said to automatically correct any railend twists to insure perfect head, web and base alignment each time a rail weld is made. With this device, the welding machine, now designated Model APHF/60R, achieves correct alignment through a clamping arrangement with specially designed stops.

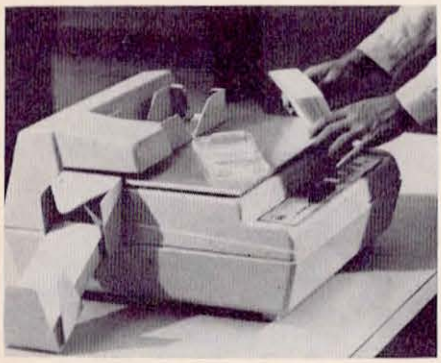
The adjustment is done by push-button under full clamping pressure so that, once the rail faces are matched, the welding operation is commenced without further clamping adjustment. The total effective clamp load, it is said, has been increased to 166 tons to eliminate any possibility of slippage during the forging stroke. A force of 41 tons is available for current application while the balance of 125 tons is applied through steel inserts, insuring minimum wear on the copper-alloy dies.

A patented air/oil intensification system has been incorporated in the new welder to simplify the hydraulic system by elimination of a substantial portion of the circuitry. *Holland Co.*



Hopper door lock (RA-2)

A door-opening mechanism, the Damy Arms Lock, is available for discharging the load of a hopper car in a matter of seconds. The mechanism, operated through a lever by one man from either side of the car, permits simultaneous opening of two to eight hopper doors. The doors can be closed by moving the lever in the opposite direction. The lock automatically locks the doors in position, either open or closed. *Morrison Railway Supply Co.*

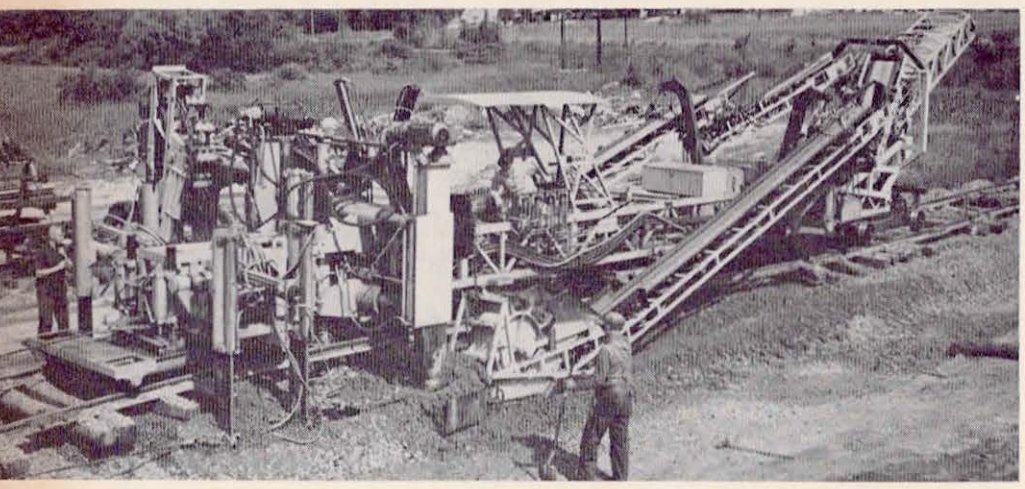


Document reader (RA-3)

A new document reader transmits either 8 or 12 parallel data bits to data recording equipment. The MDR-8000, a mark-sense document reader, can read cards or page-size forms of varying sizes and shapes which are marked with an ordinary lead pencil, besides reading punched data.

The MDR-8000 can transmit information in parallel, in hard-wired applications. Documents can be read directly to magnetic or paper tape for subsequent entry into a computer at high speed. Or the information can be transmitted directly to a data processor. The MDR-8000 reads the Hollerith input code.

Material can be fed into the reader by hand or, optionally, from an automatic 250-tab card hopper. The automatic hopper is equipped with audible and visual empty-condition alarms. *Motorola Instrumentation & Control Inc.*



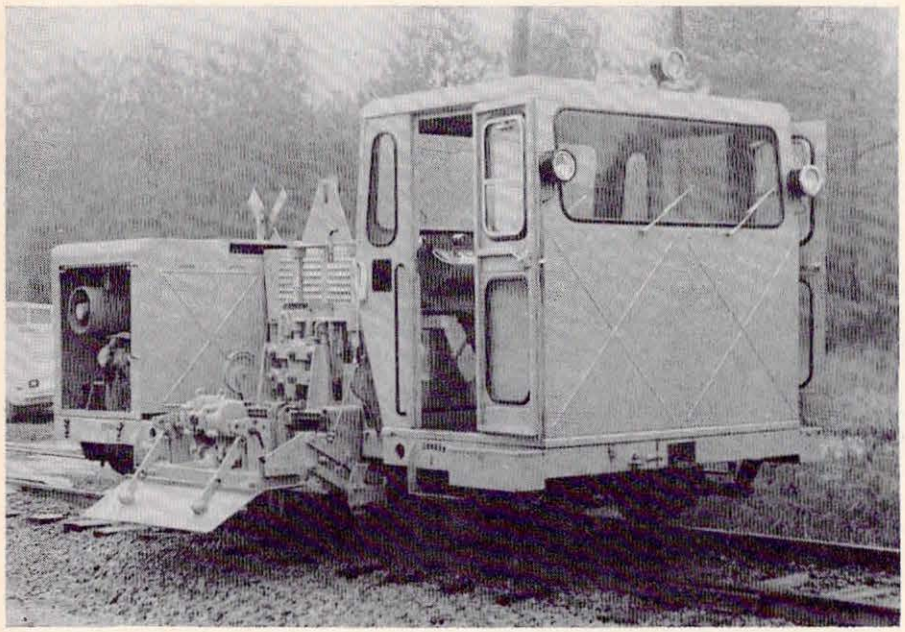
Undercutter loader (RA-4)

Pick up and loading of waste undercut material is accomplished in the same operation as the undercutting with the new Mannix Undercutter-Loader.

As undercut material is moved out to the shoulders, it is picked up by a conveyor and raised to the rear of the machine. Here it is transferred to another elevating conveyor which deposits it in a car immediately behind the machine, or casts it out 28 feet on either side of the track.

One advantage claimed for this machine is its ability to make its own run-in and run-out when undercutting, thus eliminating the time and labor for these operations.

The Mannix Undercutter-Loader has built-in power for operating its equipment and for propelling itself to and from work locations. A Mannix Winch Cart is used for pulling purposes while it is in operation. The over-all working width of the machine is 14 feet 2 inches. This, plus the rear-loading feature, is said to make it well-suited for undercutting in close quarters, as in tunnels and in rock cuts. *Mannix Maintenance of Way Division.*



Ballast compacter (RA-5)

A machine called the Crib and Shoulder Tamper provides the increased lateral track stability necessary on curves and on track laid with welded rail. The manufacturer points out that recent tests with this unit have proved:

(1) The lateral track resistance can be improved as much as 100% over conventional tamping with the application of this machine; (2) stability of the ballast is greatly increased with higher density as a result of mechanical vibratory action; (3) a reduction in the number of slack ties by as much as 45%; and (4) a machine of this type could be amortized in 2½ years because of savings from reduced maintenance alone.

The Crib and Shoulder Tamper has eight crib compactors, driven by electric motors. They work simultaneously on the ballast at each end of the tie, inside and outside the rails. The machine also has a plate-type compactor with hinged wings for each ballast shoulder which is adjustable to match the shoulder contours. It is powered by a 77-hp diesel engine. *Tamper, Inc.*

Ballast cribber (RA-6)

The latest model of Racine's Ballast Cribber incorporates an improved work head. A rugged spring isolator arrangement has been added to reduce transmittal of vibration from the head to the machine.

This unit has a pivoted head to crib out ballast under either rail. It is used ahead of a Joint Straightener or for maintenance anchoring. The vibratory action is said to remove all types of ballast quickly. *Racine Hydraulics Division, Rex Fluid Power Group.*

Auto-spiker (RA-7)

A number of refinements have been incorporated in the design of the RMC Auto-Spiker. A new-style magnet-holder arrangement and new spike-chute design provide smoother operation, remain in adjustment and reduce time required to adjust to changes in spike pattern.

Other refinements in the design include improved controls, longer travel of spiking-gun carriage, improved piping and cylinder arrangements, along with better visibility. *Railway Maintenance Corp.*

NEW LITERATURE

LOADING LIQUIDS. Dover Corp.'s OPW Division has issued a two-color, 28-page catalog about OPW Liquid Loaders for transfer of bulk liquid products. It contains illustrations of current styles of loaders, featuring top loading, bottom loading and vapor recovery loading assemblies. (NL-1)

SAFETY GOGGLES. American Allsafe Co. has issued an illustrated brochure outlining a new order-number system that allows the safety-goggle buyer to select his exact needs from 2,000 different combinations of MonoGoggle frames, lenses and headbands. (NL-2)

FLOODLIGHTS. Long-life, hermetically sealed mercury floodlights, specifically designed for use where high candlepower is desired and where floodlights are hard to maintain, or in contaminated areas, are described in a new 4-page bulletin prepared by Westinghouse Electric Corp.'s Outdoor Lighting Department. (NL-3)

RAILWAY AGE

30 Church Street, N.Y., N.Y. 10007 READERS' SERVICE (Att. J. Lindstrom)

PLEASE SEND ADDITIONAL INFORMATION ABOUT PRODUCTS IN ADVERTISEMENTS NUMBERED: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

PLEASE SEND INFORMATION ABOUT PRODUCTS AND LITERATURE DESCRIBED ON PAGES 56-57 MARKED: RA-1- RA-2 RA-3 RA-4 RA-5 RA-6 RA-7 NL-1 NL-2 NL-3

NAME ..... TITLE .....

COMPANY .....

ADDRESS .....

CITY ..... STATE ..... ZIP .....

• Inquiries can be processed only if title and company are shown. 5/11/70

(Continued from page 55)

Joseph T. Stewart, Jr. has been appointed assistant director of product engineering, **American Car & Foundry division, ACF Industries,** St. Charles, Mo. **Alfred R. Huxen** has been named a Southwestern district sales representative, **Shippers Car Line division,** with headquarters in Houston. Mr. Stewart was previously manager of product engineering, **W-K-M Valve division, ACF,** Houston. Mr. Huxen was formerly freight sales representative, **Illinois Central,** Houston.

John C. Kerans has been appointed vice president for container services, **American Export Freight, Inc.,** agent for **American Export Isbrandtsen Lines.** Mr. Kerans was previously AEIL's director general, Mediterranean area, with responsibility for both container and break bulk operations in Europe, the Mediterranean and Red Sea.

Andrew R. Magnuson, assistant advertising manager, **Aeroquip Corp.,** Jackson, Mich., has been advanced to advertising manager for special markets. He will be responsible for advertising and sales promotion programs of the Republic Rubber Division and Aeroquip (Canada) Ltd., as well as several Industrial Division markets, including the railroad market.

Edward D. Grady has been appointed vice president—sales, container services division, **Containerfreight Corp.,** Long Beach, Calif. Mr. Grady was formerly vice president of a Los Angeles harbor transportation company, with responsibilities in planning and development of container-handling services.

Evan R. Evans has been elected director—president, **Timken do Brasil S.A., Commercio e Industria,** a subsidiary of the **Timken Roller Bearing Co.** He succeeds **E. A. Carpentieri, Jr.,** resigned. Mr. Evans was formerly assistant general manager Timken do Brasil.

Richard J. Quilter, manager of transportation sales, Standard Steel Division, **Baldwin-Lima-Hamilton Corp.,** has assumed additional responsibilities for advertising and public relations activities. His sales responsibilities stress wheels, axles and wheel assemblies for the railroad and rapid transit industries.

James A. Culbertson has joined the **Youngstown Steel Door Co.** as assistant to vice president of manufacturing, Youngstown, Ohio. He was formerly assistant manager of wheel and brake engineering, Goodyear Aerospace Corp., Akron, Ohio.

Robert F. Batchman has been appointed sales representative, Southeastern district, **Durox Equipment Co.,** with headquarters in Florida. Mr. Batchman has had more than 35 years experience in the Mechanical Department, **New York Central,** prior to its merger with the **Pennsylvania.**

David F. Snyder has been appointed eastern district sales representative for Durox, with responsibility for sales to railroads in Eastern United States.

Alfred S. Gorawski has been named vice president of engineering, **Malaker Corp.,** High Bridge, N.J.

The **Okonite Co.** and the Wire & Cable Division, moved their joint headquarters from 220 Passaic Street, Passaic, N.J., to new facilities at Hilltop Road, Ramsey, N.J., on March 16.

SSI Container Corp. has elected the following: **Kenneth J. Toth,** vice president—North America, at San Francisco; **Robin S. Bryant,** vice president—Europe, at London; and **Thomas S. Tan,** vice president—Pacific, at Mill Valley, Calif.

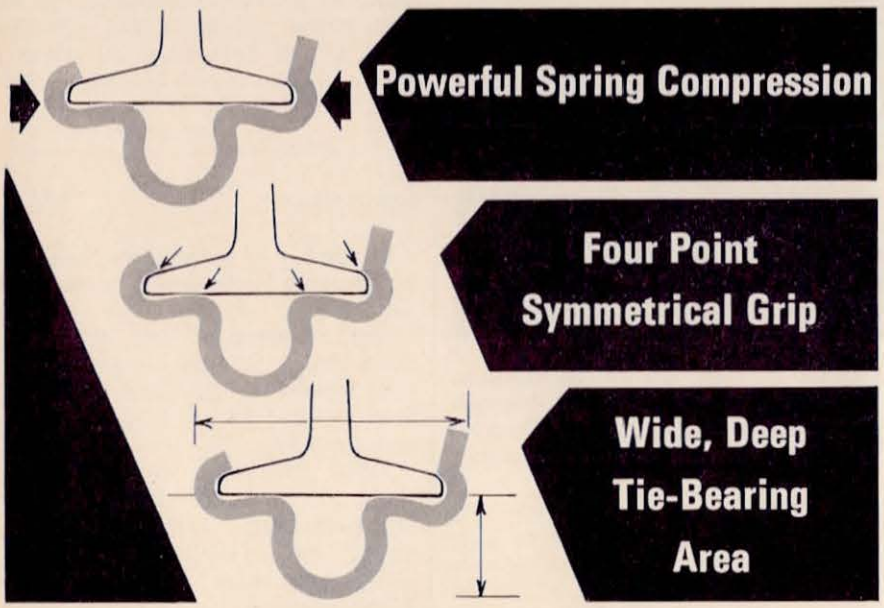
James M. Knight has been appointed director of marketing planning and analysis, San Francisco. He was formerly director of marketing, Delta Lines.

B. R. Merta, field engineer has been promoted to eastern district manager, **Thomas A. Edison Industries, McGraw-Edison Co.,** Bloomfield, N.J.

William V. Garrett has been named rail products sales representative for the Houston division, **L. B. Foster Co.**

General Railway Signal Co. has appointed the following to the new positions of district managers: **Clarence W. Com-**

(Continued on page 63)



The extra holding power of WOODINGS RAIL ANCHORS

gives the reserve you need for welded rail

And that's a proven fact! Tests conducted by railroads and independent laboratories have demonstrated the superior holding power of Woodings Rail Anchors. They give the consistently strong grip that welded rail requires.

Woodings Rail Anchors can be placed quickly and accurately by hand or mechanical means. They have a high reapplication value without reconditioning, cannot be overdriven, can be easily removed and reinstalled, and are self-adjusting to mill variations of rail dimensions.

MEMBER RPI

WOODINGS-VERONA TOOL WORKS

Verona, Pa. 15147

Circle 24 on coupon page 57

Market Outlook

CARLOADINGS

Loadings of revenue freight in the week ended May 2 totaled 553,872 cars, the Association of American Railroads announced on May 7. This was a decrease of 99 cars, or 0.2%, compared with the previous week; a decrease of 28,660 cars, or 4.9%, compared with the corresponding week last year; and a decrease of 28,554 cars, or 4.9%, compared with the equivalent 1968 week. Ton-miles generated by carloadings in the week ended May 2 are estimated at 15.3 billion, a decrease of 0.8% below the corresponding week of 1969, and 2.7% above the 1968 week.

REVENUE FREIGHT CARLOADINGS

Commodity	Apr. 25 week	Apr. 18 week
Grain	25,584	24,359
Farm products	12,740	12,377
Metallic ores	40,194	29,204
Coal	100,298	104,082
Crushed stone, gravel & sand	29,226	28,107
Nonmetallic minerals	9,864	9,855
Grain mill products	18,619	18,472
Food & kindred products	26,055	25,640
Primary forest products	24,073	24,571
Lumber & wood products (except furniture)	15,668	15,141
Pulp, paper & allied products	25,893	25,223
Chemicals & allied products	35,117	35,862
Petroleum products	10,033	10,457
Stone, clay & glass products	21,454	21,439
Coke	8,478	8,558
Metals & products	35,371	34,736
Motor vehicles & equipment	21,608	21,443
Waste & scrap materials	15,519	15,654
Forwarder & shipper assn. traffic	7,078	6,159
All other carloads	70,135	65,794
LCL traffic	964	1,138
Total cars loaded	553,971	538,271

CUMULATIVE TOTAL, 17 WEEKS	1970	1969	1968
	8,575,693	8,736,282	8,847,339
Estimated Revenue ton-miles (billions) 17 weeks	245.8	243.0	238.7

PIGGYBACK CARLOADINGS

U. S. piggyback loadings for the week ended April 25 totaled 21,753 cars, carrying 36,834 trailers, compared with 25,469 cars, carrying 42,624 trailers, in the corresponding 1969 week. Loadings for 1970 up to April 25 totaled 409,425 cars, carrying 693,568 trailers, compared with 430,424 cars, carrying 706,581 trailers, in the corresponding period of 1969.

IN CANADA

7 days ending	Revenue Cars Loaded	Cumulative Totals
April 14, 1970	71,214	1,021,166
April 14, 1969	68,814	1,037,498

FREIGHT-TRAIN CARS

● *Orders and deliveries.*—Orders were placed for 3,080 new freight cars in March, compared with 3,632 in February and 5,957 in March 1969. In addition, 113 cars were ordered rebuilt in March, compared with 500 in the preceding month and 721 in March 1969. New cars on order and undelivered on April 1 totaled 36,426, compared with 40,704 on March 1 and 34,068 on April 1, 1969.

FREIGHT TRAIN CARS ORDERED AND DELIVERED AND BACKLOG OF ORDERS

DELIVERED

	March 1970	Feb. 1970	March 1969
Built new by car builders	5,386	4,859	4,516
Built new in R. R. shops	1,246	896	796
Built new—total	6,632	5,755	5,312
Rebuilt	428	487	451
TOTAL DELIVERED	**7,060**	**6,242**	**5,763**

ORDERED

To be built new by car builders	1,948	3,236	5,157
To be built new in R. R. shops	1,132	396	800
To be built new—total	3,080	3,632	5,957
To be rebuilt	113	500	721
TOTAL ORDERED	**3,193**	**4,132**	**6,678**

ON ORDER AND UNDELIVERED

	April 1, 1970	March 1, 1970	April 1, 1969
To be built new by car builders	26,595	30,759	24,326
To be built new in R. R. shops	9,831	9,945	9,742
To be built new—total	36,426	40,704	34,068
To be rebuilt	5,130	5,445	3,966
TOTAL ON ORDER	**41,556**	**46,149**	**38,034**

LOCOMOTIVES

● *Pittsburgh & Lake Erie.*—Will purchase 10 new switching locomotives in 1970 as the first step in a long-range replacement program.

MAINTENANCE EXPENDITURES

● *Fourth Quarter 1969 8.2% above fourth quarter of 1968.*—Expenditures by Class I roads for maintenance of equipment, way and structures in the fourth quarter of 1969 were up about $69 million, compared with the fourth quarter of 1968, according to report of AAR Economics & Finance Department, summarized below.

	Fourth Quarter 1969	1968	% Change
Maintenance of way and structures	$386,822,007	$360,334,579	+7.4
Maintenance of equipment	525,776,657	482,943,974	+8.9
Totals	912,598,664	843,278,553	+8.2

FOREIGN

● *Korea.*—World Bank and its affiliate, the International Development Association, will lend $55 million for the development program of the Korean National Railroad. KNR has increased the size of its planned investment for 1967-71 from $240 million to $308 million. Total cost of the program during the last two years will amount to $155.8 million. The WB loan and IDA credit will finance part of the foreign exchange costs during this period. They will be used for specific goods procured through international competitive bidding, including 50 diesel locomotives, 2,740 freight cars, telecommunications equipment and mechanized track equipment and the services of consultants to study some technical aspects of KNR operations.

● *Sierra Leone Development Co.*—Has ordered three 2,000-hp, six-axle diesel-electric locomotives from MLW-Worthington. The cash export order is valued at about $750,000. The locomotives will be used to haul iron ore over a 52-mile line from a mine to the port of Pepel.

MAINTENANCE OF WAY

● *Penn Central.*—Has ordered, from several manufacturers, 95 machines especially designed for track rebuilding operations, at a cost of about $1.5 million. In addition, PC has ordered four large, self-propelled machines which sweep and clean yard tracks, depositing dirt and litter in hopper cars for disposal. The machines, especially designed for PC, will cost over $327,000.

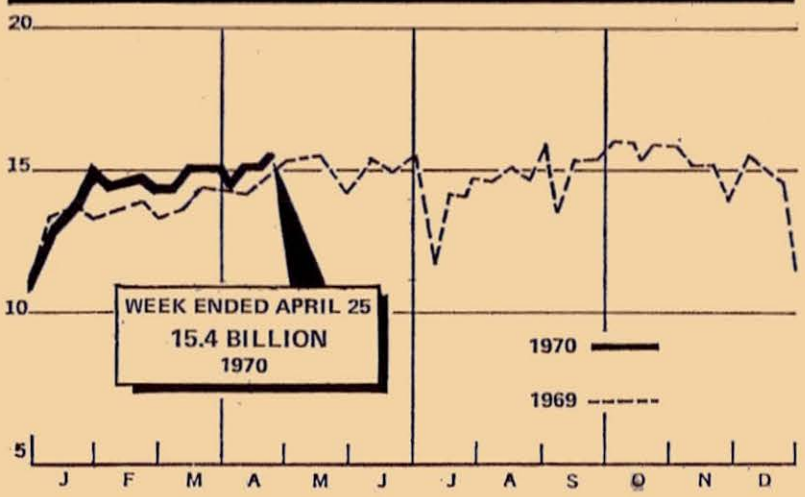
Meanwhile, PC has announced a multi-million-dollar M/W upgrading program in its Western Region. It will involve replacing 101 miles of rail with continuous welded rail, 1,200 miles of track leveling work, 500 miles of ballast cleaning to improve drainage, and cross-tie renewals over 472 miles of track. Also, PC is stepping up its M/W program over 1,025 miles of its Northern Region track. Work programmed for completion this year includes renewal of cross ties over 216 miles of track, leveling 375 miles, upgrading the joints on 282 miles and replacing 46 miles of rail. About 107 miles of rail will also be ground to improve riding qualities.

TRANSIT

● *Washington Metropolitan Area Transit Authority.*—Will award a $500,000-$700,000 contract for installation of about one mile of new and relocated overhead electric power lines and supporting structures in the Union Station area. Notices have been mailed to more than 400 bidders, suppliers and other interested firms. The Authority expects to open bids about June 16. Construction time of the project is estimated at about nine months.

RAIL FREIGHT TRAFFIC TRENDS

BILLION TON MILES (Estimated)



Source: Association of American Railroads

TRANSPORTATION REVENUE AND TRAFFIC OF OIL PIPE LINE COMPANIES

(FOURTH QUARTER 1969 AND 1968)

REVENUES

1969 $283,422,960

1968 $253,024,149

TRAFFIC*

1969 1,963,510,098

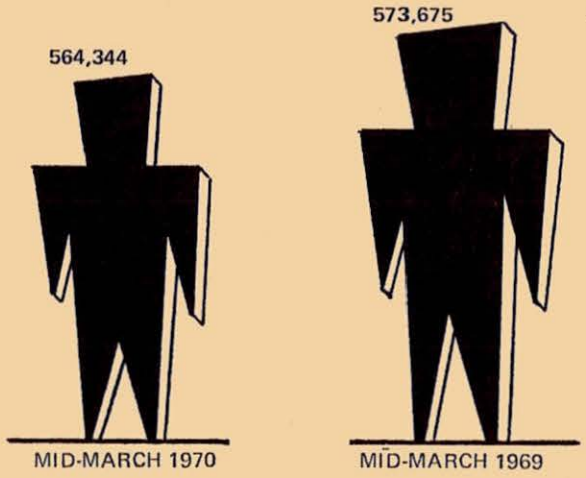
1968 1,849,339,131

*Barrels of oil originated on line and received from connections.

Source: Bureau of Accounts, ICC. Compiled from reports of 85 pipe line companies having individual operating revenues exceeding $500,000.

RAILROAD EMPLOYMENT

(CLASS I LINE-HAUL RAILROADS)



Source: Bureau of Accounts, ICC.

All statistics compiled, computed and formatted by TRADE*QUOTES Division of National Information Services, Inc. Cambridge, Mass. 02139

RAILWAY AGE Stock Report

TWO WEEKS ENDED MONDAY, MAY 4, 1970

	PRICE 1970 RANGE (1)	PRICE 1 YEAR AGO	PRICE CLOSE MAY 4 1970	PRICE 2 WKS NET CHNG	PRICE 2 WKS PCT CHNG	VOLUME 2 WKS IN 00'S	VOLUME LAST 2 WKS 00'S	VOLUME AVGE IN 00'S (2)	INDEX PRICE JAN 2 1970	INDEX CHNG TO DATE (1)	INDEX PCT CHNG
RAILROADS											
BURLINGTON NORTHERN	37- 41	N/A	37 1/8	- 5/8	-1.6	496	692	975	40 5/8	-4	-8.6
CHESAPEAKE & OHIO	51- 59	69	51 1/4	-3 3/4	-6.8	319	334	278	54 3/4	-4	-6.3
CHIC MILW ST.P & PAC	13- 20	46 1/4	13 3/4	-3 1/4	-19.1	273	444	481	16 3/8	-3	-16.0
CHIC, ROCK ISL & PAC	18- 22	28	17 7/8	-2 3/8	-11.7	25	39	44	19 3/4	-2	-9.4
DERECO PFD B	50- 64	66 1/2	49 3/4	-10	-16.7	156	64	61	53 3/4	-4	-7.4
GULF, MOBILE & OHIO	65-175	95 3/4	68 1/4	-8 1/2	-11.0	56	40	36	63 1/2	+5	+7.4
LOUISVILLE & NASHVLL	66- 74	86 3/8	66	-4 1/4	-6.0	132	46	93	71 1/4	-5	-7.3
MISSOURI PACIFIC A	63- 68	80 5/8	63 1/2	-1 1/4	-1.9	9	18	12	63 1/4	0	+0.3
NORFOLK & WESTERN	75- 86	98 3/8	75	-8 1/2	-10.1	674	229	618	83 1/2	-9	-10.1
READING CO	10- 17	22 1/4	10 1/4	-3	-22.6	165	161	136	12 1/4	-2	-16.3
ST LOUIS-SAN FRNCSCO	38- 45	48 1/4	37 1/2	-3 5/8	-8.8	138	118	112	40 3/8	-3	-7.1
SOO LINE	22- 31	36 1/2	22	-7 1/4	-24.7	35	40	49	27 1/4	-5	-19.2
SOUTHERN	44- 50	54 7/8	46 1/4	-3 1/8	-6.3	483	291	453	46 3/4	-1	-1.0
WESTERN PACIFIC	15- 23	36 3/8	16 1/2	-1 1/2	-8.3	574	520	393	19 1/2	-3	-15.3
DIVERSIFIED COMPANIES											
CANADIAN PACIFIC	55- 75	90 1/2	54 1/2	-7 1/2	-12.0	276	77	180	73 1/2	-19	-25.8
ILLINOIS CENTRAL IND	24- 31	38 5/8	24 1/8	-2 7/8	-10.6	471	158	761	30 5/8	-7	-21.2
KATY INDUSTRIES	9- 14	21 3/8	10 1/8	- 3/4	-6.8	217	136	269	10 5/8	-1	-4.7
NORTHWEST INDUSTRIES	12- 17	24 7/8	13 1/8	-2 1/8	-13.9	923	956	1443	13 3/4	-1	-4.5
PENN CENTRAL CO	18- 35	52 1/8	18	-3 1/4	-15.2	4399	1259	2471	29 1/2	-12	-38.9
RIO GRANDE INDUST	11- 14	19 1/4	11 3/4	-1	-7.8	108	221	165	11 3/4	0	0.0
SANTA FE INDUSTRIES	23- 26	32 3/8	23 1/4	-2 5/8	-10.1	1141	991	1451	25	-2	-7.0
SOUTHERN PACIFIC CO	31- 37	38 7/8	31 1/8	-2 7/8	-8.4	2275	1610	1360	33 1/4	-2	-6.3
UNION PACIFIC CORP	38- 48	N/A	38 1/4	-5	-11.5	6	889	722	46	-8	-16.8
MOTOR CARRIERS											
ASSOCIATED TRANSPORT	7- 12	17 5/8	7 1/4	-1 1/2	-17.1	197	91	101	11 3/4	-5	-38.2
CONSOL FREIGHTWAYS	24- 31	31	25 3/8	-2 3/8	-8.5	524	587	684	28 1/2	-3	-10.9
MC LEAN TRUCKING CO	33- 45	53 1/8	35	-6 1/2	-15.6	90	57	140	44 3/8	-9	-21.1
OVERNITE TRANSPORT'N	18- 23	28 3/8	22	+ 7/8	+4.1	94	75	85	18 5/8	+3	+18.1
PAC INTERMTN EXPRESS	12- 18	24	14 1/2	-2	-12.1	117	516	214	15 3/4	-1	-7.9
ROADWAY EXPRESS	20- 27	27 1/4	23	- 1/2	-2.1	(3)	-	-	26 1/2	-4	-13.2
TRANSCON LINES	9- 13	19 1/2	10 1/8	- 3/4	-6.8	162	1345	577	11 1/2	-1	-11.9
YELLOW FRGHT SYSTEM	20- 27	26 3/4	19 1/2	-4 1/2	-18.7	(3)	-	-	25 1/2	-6	-23.5
AIRLINES											
AMERICAN AIRLINES	21- 31	34 5/8	24 1/8	-1 1/8	-4.4	1739	1144	3921	31	-7	-22.1
DELTA AIR LINES	27- 35	38 1/2	30	-1 1/8	-3.6	2156	1412	1885	30 3/4	-1	-2.4
EASTERN AIR LINES	12- 19	24 3/8	14 5/8	- 1/2	-3.3	2437	1618	2759	15 1/2	-1	-5.6
TRANS WORLD AIRLINES	14- 26	39 3/4	14 3/8	- 3/4	-4.9	2585	2167	2616	23 7/8	-10	-39.7
UAL INC (UNITED)	20- 28	40 1/2	19 3/4	-2 5/8	-11.7	1912	823	2235	28	-8	-29.4

ALL BUT TWO OF THE ABOVE SECURITIES ARE LISTED ON THE NEW YORK STOCK EXCHANGE; ROADWAY EXPRESS AND YELLOW FREIGHT SYSTEM ARE TRADED OVER-THE-COUNTER.

(1) TO NEAREST DOLLAR
(2) AVERAGE TWO-WEEK TRADING VOLUME SINCE JANUARY 1, 1970
(3) VOLUME IS NOT REPORTED FOR OVER-THE-COUNTER ISSUES

(Continued from page 58)

pher, Atlanta; **Thomas H. Evans,** St. Paul; **Thomas J. Judge,** Oakland; **S. M. Latone,** Boston; and **Fred W. Smallenburg,** St. Louis. Formerly, Messrs. Compher, Evans, Judge, and Latone were sales representatives at the same points. Mr. Smallenburg was sales operations specialist, Rochester.

Charles H. Mertz, manager of customer service, **Westinghouse Air Brake Division, WABCO,** has been named manager of manufacturing, **Signal and Communications Division,** Swissvale, Pa.

Jack Rebman has joined **Lord Corp.** in the newly created position of vice president, Erie, Pa. His initial responsibility will involve systems programming for all product and market activities. Mr. Rebman was formerly vice president and manager, Systems Division, Daniel, Mann, Johnson & Mendenhall, Los Angeles.

George H. Koester has been appointed supervisor of rail and rapid transit systems, Application Engineering Department, **General Railway Signal Co.,** Rochester, N.Y. Mr. Koester was formerly senior applications engineer. He has had 13 years of railway signaling experience with the **Chesapeake & Ohio.**

Sam R. Barry has been appointed product sales engineer—railroad sales, **CF&I Steel Corp.,** Denver, Colo.

Raymond R. Robson has been appointed manager of customer service, **Shunk Manufacturing Co.,** Bucyrus, Ohio. He was formerly field engineer, **Austin Co.,** Cleveland, Ohio.

John E. Rehm, operations manager, **Shunk Manufacturing Co.,** Bucyrus, Ohio, has been promoted to vice president operations. **Richard H. Collins,** manager of manufacturing, promoted to vice president manufacturing.

Midwest Freight Car Co. has been formed to repair, rebuild and modify all types of freight cars. Plant site of the new company, which began operations in early April, is on the Illinois Central at Clinton, Ill. Officers are **C. A. Mapp; W. V. Davey; W. H. Stout; H. C. Woodman.**

Vito Gruzdis has been named production superintendent, **Alco Spring Industries, Inc.,** Chicago Heights, Ill.

F. F. Conte has been appointed marketing engineer for railway and industrial markets, **Signal and Communications Division of WABCO,** Pittsburgh. He was formerly a senior documentation engineer, Marketing Communications Section.

Robert H. Barnhill, sales promotion manager, **Wix Corp.,** Gastonia, N.C., has been promoted to assistant sales manager, Industrial Division. He will work with original equipment and railroad accounts.

Oliver M. Chiesl has been named to the newly created position of coordinator o advertising and public relations, Metering and Controls Group, **Singer Co.** Mr. Chiesl is presently manager of advertising and promotion, **Vapor Corp.,** and will continue in this capacity in addition to his group responsibilities.

Terrance R. Thomas II appointed regional sales manager for the Pacific Northwest, **SSI Container Corp.,** in charge of the new office at 40 South Spokane Street, Seattle, Wash. Mr. Thomas was formerly assistant manager, container division, States Steamship Co.

Cor Tec, Inc., Auburn, Wash., has granted a license to **Thames Plywood Manufacturers, Ltd.,** Essex, England, for the manufanture of fiberglassed plywood container panels in sizes up to 10 ft. wide by 40 ft. long.

TRANSIT

George M. Thorne-Booth has been elected vice president, **Dashaveyor Co.,** Los Angeles, Calif., developer and manufacturer of automatic transportation systems for moving people, cargo and solid waste materials. Mr. Thorne-Booth was formerly with Westinghouse Electric as an engineering manager of the Transportation Division responsible for the design of the San Francisco BARTD train control system.

Seymour Kashin resigned as general manager, **Marin County (Calif.) Transit District** on April 30.

Hand-thrown or remote-controlled

Hayes ALL-STEEL DERAILS

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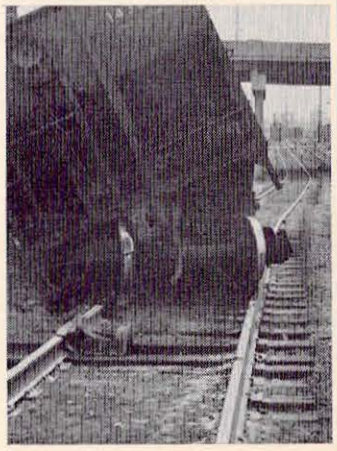

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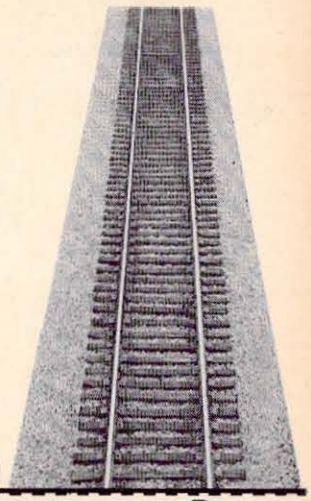

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Cybernetics Symposium

(Continued from page 41)

"We have harnessed computer power to pull us through some difficult problems . . . to raise our level of service and lower our operating costs," said Robson.

He noted that applied cybernetics helped GN reduce terminal costs by $900,000 a year. And "in the first 15 weeks of our Car Management System, the number of empty cars on line was forced down 43%, and the number of empties provided to shippers on the day requested rose 12% despite a demand increase of 35%. Even more dramatic on the cost side of the equation was the increase in equipment utilization of some 36% due to the reduction of empty cars on line."

Many of the U.S. papers (20 out of the 50 accepted as official Symposium documents) had similar success stories to tell. And the Soviets were not far behind. The USSR delegation reported that computerized class yard operations had reduced turn-around time of cars with a saving of $500,000 per terminal; output of locomotive crews was increased 10% through computerization of interdivisional runs; empty car time was reduced up to 5%.

● **A generalization gap.** Not all of the papers dealt in such specifics. Often discernible was what one delegate called a "generalization gap." Another, Penn Central's George Wallace, observed that the symposium revealed "a spread in ideas as to what cybernetics is. The North Americans lean to the belief that anything done with a computer is cybernetics. The continental Europeans, on the other hand, term as cybernetic any systematic philosophy or integrated symbolic logic. Norbert Weiner, the father of cybernetics, thinks primarily in terms of self-activating, self-maintaining, goal-seeking machines or working systems." (It was the Weiner approach which Wallace and co-author E. C. Christ followed in the paper, "Railroad Isotype Management Information System," which was singled out for special praise by Dr. Sydney Jones, member for research of the British Railways Board.)

● **The future.** What new applications will cybernetics find on the railways? There was no end of speculation —some of it fuzzy, much of it specific. In the latter category was a suggestion by General Electric's Bryce Wyman, who wondered, in a between-sessions corridor discussion, if cybernetic approaches couldn't be used to resolve the economic problems of electrification. "I am forever amazed at the amount of time railroads spend in generating electric power," said Wyman. "If they got out of the power generating business, and deployed the same resources to serving their customers better, the payoff would be tremendous. Too often, it seems to me, we are reaping pennies when we ought to be going for dollars. Perhaps this is because most management people feel so insecure in the cybernetics area that they don't participate in the direction of the work. Thus time and effort are spent in the wrong areas. To the degree that this symposium has illuminated this weakness, it has been time very well spent."

● **Next host: The U.S.** At the conclusion of the Third Symposium, which was hosted by the Japanese National Railways, it was announced that the Fourth Symposium will be held in the U.S. in 1973, either in Washington or Chicago. ■

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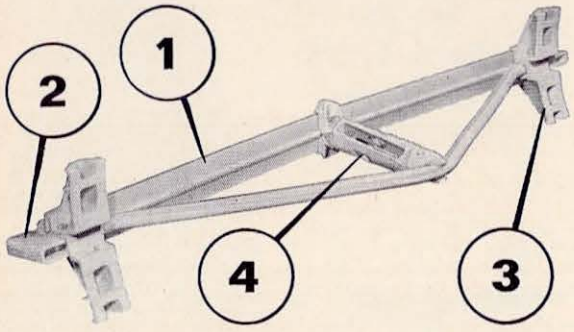

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Buckeye Steel Castings 21
Buffalo Brake Beam Co. 64
Computer Identics Corp. 16
General American Transportation Corp. 34-35
General Railway Signal Co. 17
Gould National Batteries, Inc. 4
Griffin Wheel Company 45
Hayes Track Appliance Co. 63
Intermodal Transportation Systems, Inc. 16
International Car Corp. 54
International Nickel Company, The ..... BC
Kerite Company, The ..... IBC
Lenkurt Electric Company 6
McGraw-Hill Book Co. 52
Milner Hotels 52
Monogram Industries, Inc. 53
National Car Rental Systems, Inc. 46
National Lead Company 18-19
Ohio Brass Company 50
Pullman-Standard 22-23
Railway Educational Bureau 64
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Servo Corporation of America 9
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Viewpoint

Applied cybernetics vs garbage collection

International meetings of experts have been variously described as (1) the cruelest punishment ever inflicted by man upon himself, (2) the most effective mass sedatives yet devised, or, at best, (3) mutual-admiration gatherings that conclude, after days of drowsing and droning, that we are all very fine fellows.

None of these applied to the Third International Symposium on Railway Cybernetics, held recently in Tokyo. This was a meeting for the books. It was almost consistently stimulating. The delegates worked long and hard. And the uneasy finding was that, in the area of cybernetics, we are all pretty lousy fellows with a lot to learn. Anyone who came away from these sessions without the feeling that he had learned much about his own shortcomings as a manager—and more importantly, his own potential—was clearly spending too much time looking at the cherry blossoms.

Much of the credit for the success of this Symposium must go to Alfred E. Perlman, vice chairman of the Penn Central, who has tirelessly evangelized the cause of applied cybernetics for nearly as long as the concept has existed. It was Perlman who repeatedly brought the Tokyo meeting sharply to life.

"I have heard too much this week that makes a great mystery out of this," cried Perlman at one point. Whereupon the other leading delegates joined him in tearing away the shroud and exposing cybernetics for what it is: A great and little understood tool which has for too long been left in the hands of the technicians.

"Garbage in, garbage out," was the message that Perlman repeatedly drove home.

Management Consultant Robert P. Neuschel put it rather more politely: "The technology of cybernetics has advanced beyond the ability of management to use it. There is still too much preoccupation with gathering information and not enough with using it . . . . In the next 10 to 15 years, what will distinguish a good company from a bad one is the extent to which it will master the computer. Top management cannot afford not to master the computer even if it means sending presidents back to school."

THE "BIG ONES" WERE THERE

Perlman had said that he wanted to bring out the "big ones" for this meeting. With the help of AAR President Thomas M. Goodfellow, he succeeded. They brought to Tokyo a delegation that was easily the most impressive of them all, qualitatively as well as quantitatively. The Americans freely conceded that they had made their own share of miscalculations. But the U.S. papers which were accepted as official Symposium documents—20 out of 50—were jammed with evidence that in applied cybernetics U.S. railroads need take a back seat to no one.

At a time when foreign technology is so extravagantly admired at home, and when so many domestic critics of our railways point accusing fingers abroad and chant, "Go thou and do likewise," the Tokyo experience was a satisfying reminder that U.S. railroads, for all their shortcomings, can still set a pace for the world.

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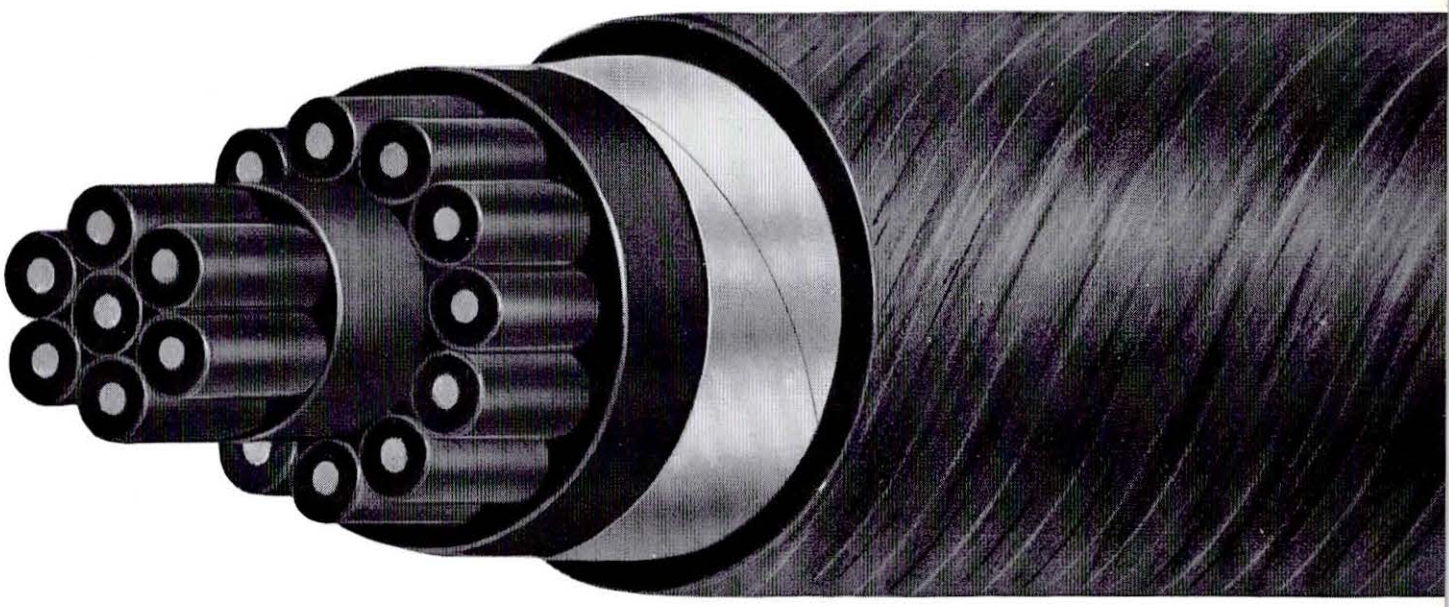

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